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**THE RELATIONSHIP OF WELLNESS FACTORS TO WORK PERFORMANCE
AND JOB SATISFACTION AMONG MANAGERS**


by

Gerald A. Hutchinson Jr.

**A Dissertation Submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy**

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Approved by


Dissertation Advisor

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The purpose of this study was (a) to assess whether components of holistic wellness were more predictive than physical wellness variables in predicting work performance and job satisfaction in managers, and (b) to assess the utility of components of holistic wellness in predicting work performance and job satisfaction in managers. A sample of 161 American managers comprised the sample.

Participants were administered the Wellness Evaluation of Lifestyle-Revised (WEL-R; Witmer, Sweeney, & Myers, 1995), four scales from the Physical Self-Description Questionnaire (PSDQ; Marsh, Richards, Johnson, Roche, & Tremayne, 1994), the Job Satisfaction Blank (Hoppock, 1977), and the Work Performance Scale (WPS) created by the researcher. The WEL-R is designed to measure components of holistic wellness. The four scales from PSDQ (Physical Activity, Endurance, Strength, and Health) measure physical fitness and physical wellness. The JSB measures global job satisfaction. The WPS measures eight managerial job performance functions. All instruments were determined to be useful with this sample after undergoing statistical analysis.

Multiple regression analyses of the hypotheses revealed that components of holistic wellness predicted work performance and job satisfaction better than physical wellness variables. Occupational wellness was the best predictor, accounting for 12% of the variance of work performance, and 35% of the variance of job satisfaction. One scale from the WEL-R, "Intellectual Stimulation, Problem-Solving, and Creativity," produced statistically significant beta weights in the regression equation for both dependent variables.

The results of the study indicate that a holistic wellness model better predicts work performance and job satisfaction than the physical fitness and health model which currently defines organizational wellness programs.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the
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TABLE OF CONTENTS

	Page
APPROVAL PAGE	ii
ACKNOWLEDGMENTS	iii
LIST OF TABLES	vii
CHAPTER	
I. INTRODUCTION	1
Purpose of the Study	5
Need for the Study	6
Research Questions	7
Definition of Terms	7
Overview of the Study	8
II. LITERATURE REVIEW	10
Definition, Models, and Theories of Wellness	11
Hettler's Hygienic Model of Wellness	12
Ardell's Eight Dimensions of Wellness	14
Witmer and Sweeney's Holistic Wellness Wheel	15
Life Tasks and Their Relationship to Wellness	16
Life Task 1: Spirituality	17
Life Task 2: Self-Regulation	17
Life Task 3: Work	18
Life Task 4: Friendship	19
Life Task 5: Love	19
The Influence of Life Forces on Life Tasks	19
Summary of Wellness Models	21
Physical Wellness Factors	22
Physiological Measures of Physical Wellness	24
Psychological Effects of Aerobic Activity on Physical Wellness ..	25
Worksite Measures of Physical Wellness	30
Occupational Wellness Factors	31
The Worker and the Work Environment	31
Personality-Environment Congruence	32
Work and Health	35
Job Satisfaction	35
Work Performance	37
Models of Work Performance	38
Sources of Performance Evaluation	41
Self Evaluation of Work Performance	42

TABLE OF CONTENTS (continued)

	Page
Summary of Occupational Wellness, Job Satisfaction, and Work Performance	43
Workplace Wellness Programs	44
Rationale for Workplace Wellness Programs	44
Types of Wellness Programs	47
Organizational Wellness Program Effects: Selected Findings ...	50
Summary of Workplace Wellness Programs	53
Chapter Summary	54
III. METHODOLOGY	58
Pilot Study	59
Background	59
Research Hypotheses	61
Procedure	62
Sample	63
Measures	63
Analysis	66
Results	66
Discussion	71
Dissertation Hypotheses	73
Participants	75
Procedures	76
Instruments	77
The Wellness Evaluation of Lifestyle-Revised	78
Physical Self-Description Questionnaire	79
Job Satisfaction Blank	80
Work Performance Scale	81
Demographic Questionnaire	83
Data Analysis	83
IV. RESULTS	
Demographic Variables of the Sample	85
Statistical Analyses of the Instruments with Study Sample	88
The Wellness Evaluation of Lifestyle-Revised (WEL-R)	88
Physical Self-Description Questionnaire	92
The Job Satisfaction Blank	94
Work Performance Scale (WPS)	95
Multiple Regression Analyses	98
Summary of the Results	103
V. DISCUSSION	104
Limitations	105

TABLE OF CONTENTS (continued)

	Page
Discussion of Results	106
Wellness Variables and Work Performance	106
Wellness Variables and Job Satisfaction	108
Implications for Management	111
Implications for Counseling Practice	112
Implications for Counselor Education and Training	115
Recommendations for Further Research	116
Concluding Remarks	119
REFERENCES	120
APPENDIX A. PERMISSION TO OBTAIN CLIENTS	136
APPENDIX B: INTRODUCTION OF RESEARCH TO RESPONDENT	137
APPENDIX C: INFORMED CONSENT TO PARTICIPATE IN RESEARCH	138
APPENDIX D: WELLNESS EVALUATION OF LIFESTYLE	139
APPENDIX E: JOB SATISFACTION BLANK	144
APPENDIX F: PHYSICAL SELF-DESCRIPTION QUESTIONNAIRE	145
APPENDIX G. WORK PERFORMANCE SCALE	147
APPENDIX H. DEMOGRAPHIC INFORMATION	150

LIST OF TABLES

Table	Page
1 Summary of Principal Factors in Three Wellness Models	23
2 Means, Standard Deviations, and t-tests from Salience Inventory Comparing Pilot Study Sample to Norm Group	67
3 Pearson Correlations between Salience Inventory "Participation in Roles" and WEL Subscales for Pilot Study Sample (N=39)	68
4 Pearson Correlations between Salience Inventory "Commitment to Roles" and WEL Subscales for Pilot Study Sample (N=39)	70
5 Comparisons of the Sample with a National Population on Key Demographic Variables	86
6 Distribution of the Sample (N=160) by Job Title	87
7 Comparison of Means and Standard Deviations for WEL-R Scales between Norm Group and Sample of Managers	89
8 Alpha Coefficients for Wellness Evaluation of Lifestyle: Norm Group and Sample	91
9 Pattern Matrix of Item Loadings for Physical Self-Description Questionnaire Scales for Sample of Managers (N=161)	93
10 Correlations between PSDQ Factors for the Sample of Managers (N=161).	94
11 Means and Standard Deviations for the Job Satisfaction Blank: Comparison of Sample (N=155) with Other Samples	95
12 Item-Total Coefficients for the Work Performance Scales for the Sample (n=155)	96
13 Correlation Coefficients for the WPS Scales for the Sample (n=155)	96
14 Factor Analysis of WPS Item-Scales with Global WPS as a One-Factor Solution for Sample (n=155)	97
15 Summary of Setwise Multiple Regression Analysis for Predicting Work Performance in Sample of Managers (n=155)	99
16 Summary of Setwise Multiple Regression Analysis for Predicting Job Satisfaction in Sample of Managers (n=155)	101

CHAPTER I

INTRODUCTION

Counselors and business leaders, in an effort to develop high-level functioning clients and employees, have adopted an interest in the concept of wellness. Wellness, however, means distinctly different things to counseling professionals and business executives. To counselors, wellness means the development of optimal functioning in a holistic sense, including dimensions such as emotion, intellect, physical health, social functioning, spiritual growth, and occupational functioning (American Association for Counseling and Development, 1989, now the American Counseling Association). This definition of wellness is a fundamental part of the problem-prevention and developmental paradigm of the counseling profession (Myers, 1992). Business and organizational leaders, however, have used the more narrowly focused medical model to operationalize wellness through worksite health and fitness programs. In business settings, wellness is equated to physical fitness and reduced risk of health problems, outcomes which lead to better work performance and health-care cost containment. Improved job satisfaction and improved morale are desired secondary outcomes of wellness in business settings (Christenson & Kiefhaber, 1988; O'Donnel, 1986; O'Donnel & Ainsworth, 1984). Researchers have indicated that the effects of worksite wellness programs have been positive and have resulted in reduced health-care costs, increased productivity, and, in some instances, improved job satisfaction (Feuer, 1985; Fielding, 1982; Gebhardt & Crump, 1990).

The definition of wellness and its targets for improvement has important implications for organizational development. Management philosophy has been changing from a mechanistic/reductionistic view of people to a holistic view of people in order to meet the

demands of an increasingly competitive global marketplace (Hamel & Prahalad, 1989; Kofman & Senge, 1993; Lawler, 1993; Senge, 1990; Shaw, 1992). The workplace is fast becoming the central location for community in a person's life, and thus "people will bring their needs for family, community involvement, and spiritual meaning to the corporation" (Conger, 1993, p. 49). Therefore, organization leaders may become interested in altering benefit programs and organizational culture in acknowledgment of the expanded (counseling) concept of wellness to meet the needs of the employee. If physical and occupational wellness account for the majority of the variance in work performance, then the current emphasis of worksite wellness programs is justified. On the other hand, other wellness factors may contribute a larger proportion of the variance of work performance than physical wellness alone. If this latter situation were true, a strong case would exist for an increasing role of counselors or counselor-consultants in business and industry settings for developing dimensions of wellness to foster optimal functioning of individuals and work groups.

In recent years, several wellness models have been proposed in the health education and counseling literature which address the concept of the development of optimal functioning and the prevention of physical and mental illness (Ardell & Langdon, 1989; Hettler, 1984; Witmer & Sweeney, 1992). Generally, wellness has been defined as the process of developing optimal and balanced or integrative functioning (or optimal functioning as an outcome). These wellness models are consistent with personality theories that maintain that humans strive for health, wholeness and integration to develop their greatest potential (Dreikurs, 1953; Jung, 1963; Maslow, 1970; Rogers, 1961).

Models of individual wellness provide a framework for assessing current integrated functioning in a variety of life areas and dimensions. Research studies of the holistic concept of wellness from the fields of counseling and psychology have been largely exploratory and have focused on variables such as personality traits (Britzman, 1987), self-

esteem (Keegan, 1983), lifestyle behaviors (Graff-Haight, 1987), employment setting (Westbrook, 1980), and attitude and behavior change as a result of participation in a wellness program (Mills, 1989; Taylor, 1991). Findings from these studies indicate that education, gender, lifestyle behaviors, and employment setting are related to the relative level of wellness.

Worksite wellness/fitness programs often have been initiated due to the underlying rationale linking physical fitness to psychological fitness ("a healthy worker is a satisfied worker") which would hypothetically result in increased work performance. Such a rationale has been supported by a large body of research establishing a positive relationship between improved physical fitness and measures of work productivity such as reduced tardiness, absenteeism, and turnover, as well as reduced health care costs. Yet, research connecting participation in worksite physical fitness programs to improved job satisfaction has been equivocal at best. Findings from one experimental study failed to link participation in a worksite wellness program and increased job and life satisfaction (Whitakker, 1987). In another study, no significant differences were found between worksite fitness participants and nonparticipants in job satisfaction and job loyalty, although the overall effect of an onsite health and fitness center was qualitatively linked to improved work culture (Rudman & Steinhardt, 1988).

What the literature to date has clearly shown is that physical exercise enhances mental health in such variables as self-esteem (Jones, 1988), self-concept (Collingwood & Willet, 1971; Doan & Scherman, 1987), creativity (Hinkle, Tuckman, & Sampson, 1993; Tuckman & Hinkle, 1986) and the perception of stress (Roth & Holmes, 1987). Physical exercise also improves physiological health in the variables of overall fitness, resting pulse, aerobic capacity, muscular strength and flexibility, body fat, and restful sleep (Hinkle et al., 1993; Jones, 1988; Lennox, Beddell, & Stone, 1990; Leon, 1983; Roth & Holmes, 1987; Siegel & Manfredi, 1984; Sime, 1977; Steptoe, Kearsley, & Walters, 1993 ;

Tucker, 1990; Tuckman & Hinkle, 1986). Employee physical fitness results in a decrease in health problems and a concomitant decrease in work tardiness, absenteeism, and turnover (Donoghue, 1977).

Participation in physical fitness and health programs, however, often has been less than favorable with dropout rates of 50% or more not uncommon (Dishman, 1982). Further, participation in worksite fitness/wellness programs is voluntary, leaving variables regarding the self-selection of participants to impact the internal validity of the studies. Some findings suggest that worksite wellness participants are more inclined to physical fitness behaviors than non-participants (Shephard, Morgan, Finucane, & Schimmelfing, 1980).

Such findings, and the complexity of the measures of physical and occupational functioning, have made conclusions regarding the relationship between physical fitness and occupational variables difficult. For instance, a construct such as occupational wellness is comprised of numerous variables such as job satisfaction, job involvement, work role salience, job stress, and congruence between personality and work environment characteristics for which work performance is an outcome. Perhaps the realization of occupational wellness as a holistic construct reflects a changing emphasis in individual-in-the-organization research from discrete factors to more complex and interrelated variables. A review of the literature revealed only one reference to occupational wellness, which linked career and personal identity (Dorn, 1992).

Businesses do not have well-articulated goals or objectives to guide their wellness programs (Christenson & Kiefhaber, 1988), as evidenced by the split between physical fitness programming and Employee Assistance Programs (EAPs). Further, businesses do not appear to understand the potential for holistic wellness (as conceived by counselors) in developing their workers' potential. A review of a prominent 773 page textbook, *Strategic Human Resource Management*, used in a Master of Business Administration program

revealed only two paragraphs on the topic of wellness, most of which was descriptive of specific worksite wellness programs (Anthony, Perrewe, & Kacmar, 1993). Wellness is a much broader concept than that operationalized by workplace wellness programs. As businesses change from command/control authority paradigms to participative management paradigms (Hammer & Champy, 1993; Nadler, Gerstein, & Shaw, 1992; Senge, 1990), the need for optimally functioning (i.e., "wellness oriented") employees at all levels is fundamental to maintaining a competitive edge. This situation offers a unique opportunity for counselors, who have been trained to assess human development and implement the integrative factors of holistic wellness dimensions. Counselors' knowledge and skills may serve a unique niche in the private sector which will have the potential to improve the quality of life for much of the American workforce.

Purpose of the Study

Models of wellness have been proposed in the counseling literature that suggest that wellness consists of functioning in several dimensions of living, and that these areas are overlapped and integrated (Ardell & Langdon, 1989; Hettler, 1984; Witmer & Sweeney, 1992). Corporate managers, on the other hand, have operationalized wellness primarily as a function of physical fitness, and secondarily, of occupational performance (Christenson & Kiefhaber, 1988; Rudman & Steinhart, 1988). Several investigations regarding physical fitness and work productivity have yielded favorable findings (Donoghue, 1977). No research has identified the relative contribution of physical and occupational wellness to work performance, nor the contribution of holistic wellness factors to work performance and job satisfaction. Several writers have argued, nonetheless, that additional factors are important for the development of lifestyle wellness or well-being, such as social functioning, love and family relationships, the development of purpose and spirituality, and psychological functioning (Conyne, 1985; Dreikurs, 1953; Erickson, 1963; Jung, 1963; Maslow, 1970; Rogers, 1961; Witmer & Sweeney, 1992; Yalom, 1980).

Because business and industry have isolated their definition of wellness to physical fitness and health as it enhances work performance, the purpose of this study is to test this limited definition by examining the contribution of these factors to an estimate of work performance and job satisfaction. The contribution of physical and occupational wellness will be compared with the contribution of other wellness factors to work performance and job satisfaction. If it can be shown that wellness involves more than just physical factors, then information can be presented to businesses to suggest the validity of more holistic approaches to wellness programming. By providing information regarding the contribution of these dimensions of wellness to work performance and job satisfaction, the results of this study may assist counselors in supporting their increasing involvement in business and industry as developmental specialists who assist in the optimization of individual and group functioning.

Need for the Study

To date, no research has examined the contribution of dimensions of wellness to a measure of work performance or job satisfaction. The physical dimension of wellness is the area in which business leaders have placed their resources in an effort to improve employee health and occupational functioning. It is known that physical fitness and health do impact psychological and occupational functioning. According to wellness models from the counseling perspective, however, the physical dimension represents a limited aspect of wellness. Other dimensions of wellness might also contribute to the performance of work and relate to the satisfactions derived from the job. If it were established that the physical wellness factors explain or predict work performance less capably than other wellness factors, then an argument could be made for counselors to direct interventions to other dimensions to improve occupational functioning.

Research Questions

This study investigated the relationship of physical and occupational factors and other wellness variables to work performance and job satisfaction. The specific research questions addressed were as follows:

1. What is the proportion of variance of work performance explained by physical wellness?
2. What is the proportion of variance of work performance explained by occupational wellness?
3. When combined, how well do physical and occupational wellness predict work performance?
4. What is the relationship of various wellness components and physical and occupational wellness to work performance?
5. What is the proportion of variance of job satisfaction explained by physical wellness?
6. What is the proportion of variance of job satisfaction explained by occupational wellness?
7. When combined, how well do physical and occupational wellness predict job satisfaction ?
8. What is the relationship of various wellness components and physical and occupational wellness to job satisfaction ?

Definition of Terms

Wellness - refers to a holistic construct of optimal functioning attained through the process of integrating and balancing demands in salient life dimensions. For the purposes of this study, wellness was measured by the **Wellness Evaluation of Lifestyle** (WEL; Witmer, Sweeney, & Myers, 1994).

Physical wellness - refers to physical fitness and health. For the purposes of this study, physical wellness was measured by three subscales of the WEL, "Exercise," "Nutrition," and "Self-Care".

Physical wellness self-concept - refers to the perception of physical wellness held by the individual. For the purposes of this study, physical wellness self-concept was measured by four subscales from the Physical Self-Description Questionnaire (PSDQ; Marsh, Richards, Johnson, Roche, & Tremayne, 1994).

Occupational wellness - refers to a multi-variant construct of occupational functioning which includes use of one's skills, lack of role conflict, perception of adequate financial resources, perception of work overload, participation in decision-making at work, satisfactory work relationships, and a balance of work and leisure. For the purposes of this study, occupational wellness was measured by the "Work, Recreation, and Leisure" scale of the WEL.

Job satisfaction - refers to the positive appraisal of one's work. For the purposes of this study, job satisfaction will be measured by a four-item adaptation of the **Job Satisfaction Blank** (JSB; Hoppock, 1977).

Work performance - refers to the effectiveness of functioning in work-task components. For the purposes of this study, work performance was measured by scales derived from the eight factors of work performance in Campbell's (1990) job taxonomy.

Overview of the Study

The study will be presented in five chapters. Chapter I is a brief introduction to the literature on wellness and the discriminate definitions used by counselors and corporate leaders. The purpose of the study, the need for the study, research questions, definition of terms, and overview of the study are also described.

Chapter II provides a review of literature and is composed of four sections. Definitions, models, and theories of wellness are described in the first section. Physical

factors of wellness, the psychological effects of physical fitness, and worksite measures of physical wellness are described in the second section. Occupational factors of wellness are described in the third section, including influences of the worker and the work environment on work and health. Work performance is defined and models that explain this concept are presented, along with methodological issues regarding its measurement. The fourth section describes worksite wellness programs, the rationale for such programs, types, and program effects.

Chapter III describes the methodology used in the study. The pilot study, hypotheses, instrumentation, subjects, procedures, and data analysis methods are included.

Chapter IV describes the results of the data analysis. Discussion of the data analysis follows the research questions and hypotheses.

Chapter V includes a summary of the study, discussion of the results and implications for management and counseling. Recommendations for future research also are included.

CHAPTER II

LITERATURE REVIEW

Corporate wellness programs place great emphasis on physical fitness and reducing health risk factors such as back problems, high-blood pressure, obesity, stress, and smoking (Fielding, 1982). The operational definition of a worksite wellness program, therefore, is a physical health program. Many organizations place additional emphasis on occupational adjustment training, such as conflict resolution and improving communication (French & Bell, 1995). In counseling, the concept of wellness pertains to broader processes of development in varied life dimensions such as intellectual, social, emotional, and spiritual dimensions, as well as physical and occupational domains (Hettler, 1984; Myers, 1992).

The limited definition of wellness that business uses is suitable for the limited purpose of cost-containment of health-care expenses. Further purposes of corporate wellness programs include increasing employee job satisfaction and creating a culture of wellness in the organization (Howard & Mikalachki, 1979). Additionally, many organizations seek to develop employees as whole persons, and are moving away from a command and control authority structure toward a participative management structure that requires that all employees know how to lead, follow, and learn as team members (French & Bell, 1995; Nadler, Gerstein, & Shaw, 1992; Senge, 1991). This movement by management towards valuing employees for their hearts and heads, as well as their hands, implies a broader appreciation of employee capabilities, and a greater interest in making sure that their minds are as able as their bodies. Thus an orientation to the whole human being, such as contained by the counseling paradigm of wellness, becomes an incumbent assumption of the new management style (Senge, 1991).

Concepts of wellness are defined and discussed in this chapter. Physical components of wellness are examined, with particular emphasis on measures of enhanced physical wellness, the psychological effects of physical activity, the relationship of physical and mental health, and workplace productivity. Occupational wellness is discussed, emphasizing literature on work and identity, job satisfaction, and the congruence between the person and the work environment. Work performance is examined with regard to its definition and methodological considerations in its measurement through self-evaluation. An examination of existing worksite wellness programs follows, including discussions of program rationales, program types, common program designs, and their documented effects. The chapter concludes with a summary of the wellness literature reviewed.

Definition, Models, and Theories of Wellness

Wellness is often referred to as both the process and outcome of the balanced integration of mind, body, and spirit (Warner, 1984); the Greek philosopher Aristotle identified this concept over 2000 years ago. Bringing this theme into the modern age, Dunn (1961), acknowledged by many to be the founder of high-level wellness theory, considered "the human body as a manifestation of organized energy...[with] body, mind and spirit of man [sic] as an interrelated and interdependent whole...[in which the individual] strives to achieve his [sic] purpose in living and grows in wholeness toward the maturity of self-fulfillment" (p. vi).

In discussing the concept of wellness and illness, Hettler (1984) recounted the story of the Greek god of healing, Aesculapias, whose two daughters each had a different approach to healing. One daughter, Panacea, believed the best way to approach healing people would be to treat all illnesses once they occur. Hygeia, the other daughter, believed that the best approach to healing people would be to teach them ways to live so that they would not become sick. The classic model of western medicine has been to place emphasis on the panaceaic approach while giving minimal attention to the hygienic approach (Hettler,

1984). In the panaceaic view, "health" means an absence of illness to treat. The World Health Organization (1958) adopted a *hygienic* approach when they defined health as not merely the absence of disease or infirmity, but the complete state of physical, mental, and social well-being. Leafgren and Elsenrath (1986) emphasized that integration of these three dimensions was insufficient, but that high-level wellness included the action of striving for balance among the dimensions as well.

Taking a different view, Ardell (1977) argued that wellness is a conscious commitment to well-being and one's own highest potentials. In later writings, he defined wellness as a matter of life quality, not a health issue (Ardell & Langdon, 1989), and as "a conscious and deliberate approach to an advanced state of physical and psychological/spiritual health" (Ardell, 1985, p. 2). Myers (1991) described wellness as optimizing potential through positive life-style choices, and she echoed Ryan and Travis (1981) by emphasizing the aspect of personal responsibility which leads to a process of optimal living.

All these authors and researchers point to the integrative nature of the wellness concept, the themes of personal responsibility, and the choice of acting in a way consistent with human potential. Dimensions of living must be balanced and work together as a whole system in order for the individual to function at optimal capability. However, the dimensions for creating optimal living are described differently by leading wellness writers. The next section will examine contemporary models of wellness proposed by Hettler (1984), Ardell and Langdon (1989), and Witmer and Sweeney (1992).

Hettler's Hygenic Model of Wellness

Hettler's (1984) concept of wellness grew out of his experience as a physician at the University of Wisconsin-Stevens Point. In his educational programming for students, he divided wellness into discrete dimensions for utility in assessment and intervention. The six dimensions are: (a) social, (b) occupational, (c) spiritual, (d) physical, (e) intellectual,

and (f) emotional (Hettler, 1984). Hettler elaborated on these dimensions through the development of the Lifestyle Assessment Questionnaire (National Wellness Institute, 1980) which described the dimensions in the following manner.

The physical dimension has five subscales. *Physical-Exercise* refers to a commitment to maintain fitness. *Physical-Nutritional* refers to the degree one chooses foods consistent with contemporary nutritional guidelines as determined by the United States Food and Drug Administration. *Physical-Self-Care* includes behaviors which prevent or detect early illness. *Physical-Vehicle Safety* refers to driving practices which minimize chances of accident and injury. *Physical-Drug Abuse* refers to the degree of functioning without unnecessary chemicals such as nicotine, alcohol, or illegal drugs.

The second dimension, social-environmental, concerns the degree of contributing to the community welfare, including acknowledgment of an interdependence with others and nature. The emotional dimension, the third, has two subscales: *Emotional Awareness and Acceptance* (degree of awareness and acceptance of self, and the ability to feel positive about self and life); and *Emotional Management* (capacity to control feelings and behavior and ability to assess accurately personal limitations). The fourth dimension, the intellectual, concerns the degree of using one's mind in creative, stimulating ways, and expanding knowledge and improving skills. The fifth dimension, occupational, concerns the satisfaction and personal enrichment gained from work. The sixth and final dimension, the spiritual, concerns the seeking of meaning and purpose in life, including the depth and breadth of life and natural forces of the universe (National Wellness Institute, 1980).

Hettler's acknowledgment of interconnecting life domains stems further from his observations of certain behavioral activities and their relationship to illness (or wellness). Hettler's model has as its primary concern the management of the individual such that illness and accident are prevented, a view of wellness guided by a hygienic view of medicine. Hettler does not discuss the actual development of wellness-seeking thoughts,

feelings, and actions within the individual; his model is limited to that of current assessment of wellness.

Ardell's Eight Dimensions of Wellness

Ardell and Tager (1982) proposed a wellness/worseness continuum of descriptors. Wellness, at one pole, is described by positive self-concept, signs of wellness, focus on vitality, aliveness, energy, calm and accountability, interdependence, health enhancing behavior, a cause vs. an effect, and joy. Contrasted with wellness, worseness was placed at the opposite pole with respective descriptors (i.e., low self-esteem, signs of illness, focus on disease, boredom, fatigue, hostility and blame, dependency, health risk habits, an effect vs. a cause, and absence of fun). In his initial conceptualization of wellness, Ardell (1977) suggested that self-responsibility, nutritional awareness, stress management, physical fitness, and environmental sensitivity comprised "high level" wellness. Self-responsibility was the primary factor, in that the individual must claim responsibility and accountability for creating a life which could lead to wellness. Self-responsibility extended through the basic activities of proper nutrition, physical fitness, and stress management to build and sustain physical health. These hygienic factors acknowledged that each individual has a role in creating an external environment (political, biological) that either fosters wellness or illness.

Ten years after publishing his early work, Ardell (1986) reconfigured the five dimensions of his model. Self-responsibility and medical self-care are grouped in one dimension, nutrition and fitness in a second, stress management and boredom immunity are grouped in a third dimension, ethics, values and purposes in a fourth, and norms and rules are at the core in the fifth dimension. Ardell argued that norms and rules that are learned as children and obeyed as adults are the single most powerful influence in living a wellness lifestyle. The greatest challenge for developing and sustaining a wellness norm in our culture would be to create environments (in the workplace and elsewhere) to excite and

attract people to wellness who were normed in a culture of "worseness" and self-irresponsible lifestyle (Ardell, 1986).

Ardell later expanded his model to eight dimensions (Ardell & Langdon, 1989). These dimensions continued to emphasize individuality and an orientation toward experiential learning in a conscious commitment to excellence. The eight dimensions included: (a) psychological, (b) spiritual, (c) physical fitness, (d) job satisfaction, (e) relationships, (f) family life, (g) leisure time, and (h) stress management. In this model, Ardell moved to broader dimensions that suggest multiple influences. The interconnectedness of the individual to the social milieu through family life and relationships advanced his notion of self-responsibility in these dimensions, yet acknowledged the influences of other people, individually and collectively, on the ability of the individual to develop wellness. Further, Ardell and Langdon's (1989) psychological and spiritual dimensions are more distinct factors than those to which he initially alluded in the self-responsibility dimension, loosely grouped as ethics, values, and purposes.

Witmer and Sweeney's Holistic Wellness Wheel

Witmer and Sweeney (1992) based their holistic model of wellness on a foundation of Adlerian theory. Adler emphasized the process of attending to major life tasks which provide for the development of the individual in a community of others (Driekurs, 1953). The model acknowledges the interconnectedness of all things, thus paralleling von Bertalanfy's (1968) general systems theory; the individual is considered intrinsic to the larger human and natural ecological systems. The living physical dimension cannot be pared from the psychological dimension which likewise cannot be quarantined from the social dimension. Beyond Adler's theoretical concepts, the wellness model is also based upon findings from psychology, anthropology, sociology, religion, education, and behavioral medicine. Empirical support for the model from personality, social, clinical,

and health psychologies are integrated in both discrete and synthesized elements of the model.

In the following section, Witmer and Sweeney's (1992) wellness model is briefly summarized. The relationship of life tasks to wellness is discussed first, followed by a review of the model from the framework of the five life tasks of the individual. Finally, external life forces which impact and inform the accomplishment of the life tasks are also examined.

Life Tasks and Their Relationship to Wellness

As humans strive for well-being, according to the psychotherapist Alfred Adler, we confront three major life tasks: work, friendship, and love (Dreikurs, 1953). Additionally, Adler alluded to the development of spirituality and coping with the self as two additional life tasks (Mosak & Dreikurs, 1967). According to Adlerian theory, as individuals grow they create a private logic about the way the world works (Sweeney, 1995). Many individuals make inaccurate assessments about themselves, their environment, and their ability to develop mastery in it; that is, their private logic is faulty. Consequently, individuals develop feelings of inferiority. These feelings often cause the individual to compensate by seeking to develop mastery and competency as they confront the life tasks (Sweeney, 1995).

The life task of work demands the ability to achieve mastery over task and situation. Occupational work may be considered as any task that has usefulness to the community (Dreikurs, 1953). Work is the most vital life task, for upon its accomplishment hinges the ability to provide for the sustenance of life. Because humans are social beings, the life tasks of developing friendship by exhibiting social interest and giving and experiencing love are essential for the psychic growth of the individual. Friendship and love require, in varying degrees, the development of cooperation, the ability to disclose intimately, and the ability to desire and accept completely as fully human another person (Dreikurs, 1953).

Life Task 1: Spirituality. Spirituality is defined as the seeking of oneness with self and the personal conceptualization of the universe (Witmer & Sweeney, 1992). Spirituality is evidenced through a sense of wholeness, inner peace, connection with the sacred, and the seeking of guidance through spiritual rituals such as prayer, meditation, worship, and contemplation. The striving for purposiveness and meaning in life, creating optimism, and developing values for guiding us in life are other important aspects of the life task of spirituality. The utility of purposiveness in life has some research evidence supporting it as an important element. Kobasa (1979) found that the commitment factor of hardiness—the tendency be purposeful and to involve oneself fully in whatever one does, is, or encounters—can reduce the chances of illness by as much as 50%. The development of moral and ethical values is considered important to guide our behavior as we interact with others. Moral values refer to ways to act for our own higher well-being and demonstrating compassion and respect for others (Young & Witmer, 1985).

Life Task 2: Self-Regulation. The life task of self-regulation refers to the ability of the individual (within the constraints and norms of society) to coordinate and manage the self in a manner that enhances well-being (Witmer & Sweeney, 1992). Self-regulation involves the integration of life purposes (relative to the spiritual dimension) through long-term patterns of cognition, affect and behavior. The self-regulation task suggests that the internal "house" must be in order before the individual can effectively direct behaviors outwardly with others. While *self-regulation* is a dimension unto itself, the discrete elements of self-regulation in Witmer and Sweeney's (1992) wellness model will be described briefly in the following section.

The *sense of worth* of the individual may be considered a part of self-esteem, or what Adler described as a striving for superiority or significance (Driekurs, 1953). *Sense of control* refers to self-mastery and self-efficacy, and may be referred to as internal locus of control (Lazarus & Folkman, 1982). *Realistic beliefs* refers to personal beliefs, or

private logic as Adler called them, that are consistent with consensual reality and individual strengths and limitations that allow appropriate responses to the environment. *Emotional responsiveness and management* includes the capacity for affective lability and the spontaneous expression of feelings appropriate to the situation. *Intellectual stimulation, problem solving, and creativity* includes mental activity (problem solving) and creativeness. *Sense of humor* refers to the expression of humor which does not detract from the worth or dignity of others. *Nutrition* refers to eating an appropriately healthy diet. *Exercise* refers to engaging in physical exercise and flexibility to be in good physical condition. *Self-Care* refers to reduction of risk factors (such as smoking and obesity), and good hygiene (regular dental visits and physical examinations) as preconditions for the prevention of illnesses and the optimization of health. *Stress management* refers to a general perception of self-regulation, including monitoring and managing resources as an opportunity for growth as opposed to a threat. *Gender Identity* refers to being satisfied with one's gender, and the ability to act androgynously, without stress. *Cultural Identity* refers to being satisfied with one's culture and to be assimilated culturally, without stress.

Life Task 3: Work. Adler regarded the work task as essential for the individual to gain a sense of worth and competence (Driekurs, 1953; Sweeney, 1995). Work encompasses everything that is done to sustain life and contribute to the sustenance of others and provides psychological, social, and economic benefits for the individual. This broad definition of work includes not only economic sustenance, but childrearing, volunteer work, homemaking, and education and training which furthers work opportunities. Super's (1957) view of developing and implementing the self-concept through vocational activities is entirely consistent with Adler's concept of work. Furthermore, career identity is interdependent with personal identity (Brown, 1985; Brown & Brooks, 1985). Unemployment on the other hand, when career identity and the ability to provide sustenance is at least temporarily uncertain, exacerbates the stresses and strains

of living. Increases in violence and mental disorders have been observed during periods of high unemployment (Pelletier, 1977).

Life Task 4: Friendship. Building social connectedness and relationship of a non-sexual and non-familial nature defines this life task. The individual is responsible for developing social relationships with others in the community including neighbors, co-workers, and persons chosen as friends. Adler regarded social interest as innate to human beings, and this idea was extended to mean compassion, altruism, and fellowship with the larger human community (Driekurs, 1953). The effects of success in this life task include social support, emotionally intimate relationships, and personal protection from health problems caused by social isolation (Witmer & Sweeney, 1992).

Life Task 5: Love. Developing love relationships is the final life task identified by Adler. Loving relationships are trusting, intimate, self-disclosing, with long-term commitment; they may also be sexual. Loving relationships are developed initially within the context of family. Several research studies have found significant relationships between loving relationships and life satisfaction, health for married men, and lower mortality among those who are married than those who are unmarried (Witmer & Sweeney, 1992).

The Influence of Life Forces on Life Tasks

The ability to perform and develop within the five life tasks is impacted by forces within the individual and the environment (Witmer & Sweeney, 1992). In this regard, the wellness model acknowledges the ecology of the person embedded in the environment and this reciprocal determination. Environmental forces including the family, religion, education, community, media, government, and business and industry will be mentioned.

Family forces shape both early and continuing development of social relations, personality, emotional expressiveness, and behavior. Religion may play a role in shaping and influencing the values, beliefs, and actions of the individual. Education influences

information acquisition, problem-solving, values development, and behavior. Community reinforces family, religious, and educational forces, and may become more important as the nuclear family becomes less influential. Media, although shaped by societal values, may amplify certain values and expectations for behavior, and thus influence greatly the course of the individual and society. Government policies and legislation influence individual and community expectations and behaviors in arenas such as Social Security, disease prevention programs, environmental protection, subsidies for agricultural production, and tax laws. Business and industry exert influence beyond the economic life of the individual; smoking and drug abuse policies have been enacted voluntarily in certain corporations (as well as through federal and state mandate). Worksite physical fitness and wellness programs have become increasingly popular as management has recognized the relationship between wellness and productivity (Naisbitt, 1982; Pelletier, 1984).

Global events and the shrinking of distance through the proliferation of the electronic media have created a "global village". The individual is no longer isolated from the goings on elsewhere on the planet. Events such as war, hunger, disaster, economic problems, and violation of human rights in other countries influence the individual process of developing wellness. Though these forces may be temporally slight and indirect, they may nonetheless become significant at a moments notice (Witmer & Sweeney, 1992).

Witmer and Sweeney's (1992) wellness model is essentially a model of wellness of the individual with acknowledgment of larger environmental constraints and opportunities. The individual can exert direct control of personal thoughts, feelings, and actions, although little direct control may be made on environmental conditions. By focusing on individual variables rather than on the larger environmental forces, Witmer and Sweeney's model allows the individual and counselors to direct efforts at factors which are achievable and salient in the process of self-regulated, purposeful living directed at sustainable work, friendship, and love relationships.

Summary of Wellness Models

Wellness has been described as the balanced integration of mind, body, and spirit operating in social and occupational dimensions. Common elements among these models include (a) the ability of the individual to regulate the self physically, intellectually, and emotionally; (b) the importance of work as a focus of identity or to facilitate life satisfaction; and (c) the development or maintenance of spirituality or purpose in life. Hettler's (1984) model emphasized a holistic framework of six dimensions comprised of social, occupational, physical, emotional, intellectual, and spiritual influences. Ardell (1986) and Ardell and Langdon (1989) emphasized individual responsibility to create an environment that fosters high-level functioning. Witmer and Sweeney (1992) adapted Adler's theory of individual psychology to a holistic wellness model comprised of the five developmental life tasks of spirituality, self-regulation, work, friendship, and love. Extending Adler's theory, they acknowledge seven life forces which impinge upon and influence the development of the individual: family, religion, education, community, media, government, and business and industry. The larger "global village" also influences individual wellness, particularly with the shrinking of distance caused by the proliferation of electronic media.

Of the wellness models discussed here, Witmer and Sweeney's (1992) model is most suitable for counselors. Although Hettler and Ardell include physical and occupational factors in their conception of total wellness, Witmer and Sweeney offer a rationale for physical and occupational factors beyond a mechanistic explanation. The Adlerian theory of individual psychology is both accessible and thorough and provides a rationale for current wellness as an outcome of past internal and external experiences of the individual, again something that is lacking in other models.

Witmer and Sweeney (1992) proposed 19 elements of wellness, thus giving the researcher and practitioner more discrete opportunities for conceptualizing and intervening

in a theoretically consistent manner. Table 1 summarizes the principal dimensions of the three models discussed here. As can be seen from this table, both physical and occupational factors which are emphasized in corporate wellness programs are common to all models. Additionally, some form of social, intellectual, and spiritual functioning is also common to the wellness models. Unlike Ardell and Langdon's (1989) model, and in a different manner than Hettler's (1984) model, Witmer and Sweeney's (1992) model provides explanations for the environmental forces which influence the individual (and which the individual influences in a reciprocal cycle).

Because worksite wellness programs emphasize the physical dimension in order to gain better productivity, or higher functioning in the occupational dimension, the physical and occupational dimensions are examined in detail in the following sections.

Physiological improvements as a result of physical exercise are discussed, followed by the effect of physical exercise and fitness on psychological functioning and the relationship between exercise and mental health. Worksite productivity measures as a result of improved physical functioning are reviewed. Variables of occupational wellness are examined, including variables not contained in operational definitions of worksite wellness programs.

Physical Wellness Factors

A significant body of research has focused on the relationship between physical fitness and total well-being. The health benefits of regular physical exercise in our sedentary society have been verified by abundant research. The relationship between physical exercise and physiological benefit will be reviewed to indicate these effects. The psychological effects of physical fitness will be discussed. Finally, worksite productivity as an outcome of physical fitness training will be considered.

Table 1

Summary of Principal Factors in Three Wellness Models

Life Dimension	Hettler (1984)	Ardell & Langdon (1989)	Witmer & Sweeney (1992)
Physical	• Physical	• Physical fitness	• Physical fitness, nutrition, and health habits
Work and Leisure	• Occupational	• Job satisfaction • Leisure time	<u>Work</u> • Psychological, social, economic benefits • Balance of work, recreation, and leisure
Psychological	• Emotional • Intellectual	• Psychological • Stress management	<u>Self-regulation</u> • Sense of worth • Sense of control • Realistic beliefs • Emotional responsiveness • Sense of humor • Intellectual stimulation, problem solving, and creativity • Gender Identity • Cultural Identity
Social	• Social	• Relationships • Family life	<u>Love</u> <u>Friendship</u> • Social interest and connectedness • Social support, interpersonal relationships, and health
Spirituality	• Spiritual	• Spiritual	<u>Spirituality</u> • Oneness and the inner life • Purposiveness, optimism, and values
Environmental forces	(None specified)	(None specified)	• Family, religion, education, community, media, government, business and industry, global events

Physiological Measures of Physical Wellness

The disciplines of exercise and sport science and medicine have performed abundant research on the physiological measures of physical wellness. Dependent variables commonly used are resting heart rate, blood pressure, maximal oxygen uptake, maximal exertion, weight, body fat, and body chemistry. Current health status relative to illness and disease is also a common dependent variable. The most accessible research has focused upon cardio-vascular functioning and body fat and weight. Findings from a sample of research will be presented here.

In an experimental study of the effects of aerobic running among schoolchildren (N=154), Tuckman and Hinkle (1986) found that cardio-vascular functioning improved among the running group; heart rate was significantly better for the runners and the running group boys had less body fat after treatment. Similar effects among third graders were found by Siegel and Manfredi (1984); duration of a timed run decreased for runners while maximal heart rate increased (7% for girls, 17% for boys). An exercise program for fifth graders that included running resulted in significant improvement in overall fitness (Duncan, Boyce, Itami, & Puffenbarger, 1983). Hinkle (1993) found reduced blood pressure, increased capacity of cardio-respiratory functioning, and decreased body fat in an eighth-grade aerobic running group.

Among college students, aerobic exercise had a significant effect on cardio-vascular fitness as measured by heart rate at a 10% grade on a treadmill test (Roth & Holmes, 1987). With an adult sample, Jones (1988) studied the effects of wellness program participation on cardio-vascular functioning and self concept. Using 49 volunteers in two matched groups over a 16-week interval, he found a significant difference in maximum oxygen uptake (Max VO₂, a measure of pulmonary efficiency) and weight change. Significant differences in physical capacity as measured by voluntary time on a treadmill were found among adults assigned to aerobic and physical fitness treatments compared

with non-exercising and wait-list controls (Lennox, Bedell, & Stone, 1990). Increased tolerance for stress as a function of aerobic running was reported in one study involving variables which contribute to coronary artery disease in adults (Leon, 1983).

These studies have established that physical exercise improves physiological functioning on certain desirable dependent measures such as reduced body fat, improved cardio-vascular functioning, maximum oxygen uptake, tolerance for stress, and improved overall fitness. Because many exercisers have reported elevated mood (i.e., "runner's high") following aerobic exercise, some researchers have hypothesized that physical exercise will enhance psychological functioning as well. This idea will be examined in the next section.

Psychological Effects of Aerobic Activity on Physical Wellness

In a review of experimental and quasi-experimental designs using physical exercise as the independent variable, Doan and Schermen (1987) found that dependent variables such as self concept, self-esteem, depression, and anxiety improved in 26 of 38 studies, with the remainder effecting no change. Folkins and Sime (1981) performed a thorough review of research (128 studies) focused on physical fitness training and mental health. Only quasi- and true-experimental designs were included to ensure the highest quality of scientific rigor. While results were equivocal regarding the long-term effect of physical fitness training on cognition and perception, significant effects were consistently found for improving mood, self-concept, and work behavior. Cognitive functioning does appear to be enhanced during and immediately following physical fitness activity (Folkins & Sime, 1981). To elucidate the relationship between psychological effects and physical activity, representative research findings will be presented here.

Tuckman and Hinkle (1986), as well as Hinkle, Tuckman, and Sampson (1993) found increases in creativity after aerobic running treatments for school children. Similar effects were found among college students assigned to twice weekly aerobic runs of 20-

minute duration; significant increases in measures of originality and spontaneous mental flexibility were found for both a 16-week treatment and a single-bout exercise group (Gondola, 1985). In an adult sample, participation in a 16-week aerobics training program was associated with improvements in self-esteem, self-satisfaction, and physical self-concept, but was not associated with improvement in overall self-concept; effects were non-differentiated due to gender (Jones, 1988). Significant and positive changes in body image and self-esteem were found among female college students engaged in a 12-week walking/jogging and body development program. Improvement in body image was related to improvement in self esteem, and the greater the improvement in body image, the greater the improvement in self-esteem (Hawkins, 1981).

Collingwood (1972) found significant differences between treatment and control group subjects (N=50, matched pairs) on the evaluative dimension, potency dimension and activity dimension of the Body Attitude scale; the treatment group demonstrated positive change on all dimensions. Significant between-group differences were found post-test on physical measures (pulse, pushups, sit-ups, and general physical performance) and were also demonstrated for self-concept and self-acceptance. Again, the treatment group showed positive change. Ratings by the subjects indicated positive treatment-group changes in physical, intellectual, and interpersonal-emotional functioning.

In a 3-week time-series design employing physical fitness training with male adolescents, significant findings included increases in self-concept and self-acceptance (Collingwood & Willet, 1971). The researchers concluded that the physical fitness training provided a positive and successful growth experience which affected the subject's self-attitudes. Women college students who participated in a semester-long course in either jogging or body fitness showed significant increases in confidence, personal adjustment, and restful sleep, and decreases in depression and anxiety (Folkins, Lynch, & Gardner, 1972).

Chronic exercise (fitness training) is associated with improvement in mood states, particularly for the more distressed or physically unfit at the outset (Folkens & Sime, 1981). Physical fitness is also correlated with level of perceived stress: the better physically fit, the lower the level of perceived stress (Tucker, 1990). Directionality cannot be inferred, however; it is possible that higher levels of stress result in lower levels of physical activity. Nonetheless, these correlations are consistent with a meta-analysis linking aerobic fitness with lower perceived stress (Crews, Landers, O'Conner, & Clark, 1987).

In a contrast to the longer duration exercise-training programs of the studies already mentioned, acute physical activity of brief duration designed solely to raise the heart rate to target levels had no effect on either depression or anxiety variables in a sample size of 120 university professors (Morgan, Roberts, & Feinerman, 1970). Despite the lack of change in depression or anxiety, the subjects reported that the exercise task was exhilarating and that they felt better following the task. The researchers proposed that individuals scoring within the normal range on depression and anxiety instruments would not be expected to change due to the exercise; further, the psychometrics may have not been sensitive enough to record the altered perceptual state of the exercise subjects.

A more recent investigation linked acute mood responses to acute exercise using randomized treatments and contrasted groups of competitive male athletes and inactive males (Steptoe, Kearsley, & Walters, 1993). Tension-anxiety was reduced after maximal exercise for the athletes but not for the inactive males. Exhilaration increased in both groups after submaximal exertion and was sustained 30 minutes after exertion; mental vigor increased at the two-minute post exertion measure, but was extinguished at the 30-minute post-treatment measure. The researchers concluded that the effects of tension-reduction in the athletes may be due to the measurement of anxiety, part of which includes a somatic

component: the athletes were more accustomed to high-pulse and blood pressure, and could differentiate these symptoms from psychological tension-anxiety.

Acute exercise has been shown to reduce muscle tension without any unwanted side effects such as occur with medicines (Sime, 1977), and has been associated with stress reduction outcomes (Rice, 1992). Stress reduction is often a related goal of the physical component of wellness programs; stress-related illness costs American businesses \$30 billion dollars a year (Overman & Thornburg, 1992). Causes of stress in organizations include role ambiguity, responsibility and decision-making, routine work tasks, workplace relationships, and work roles with close supervision and little opportunity to structure work tasks. Stress reduction counseling through Employee Assistance Programs (EAPs), supportive work and family policies, and effective communication policies were found by Northwestern National Life Insurance company to reduce stress-related illnesses by half (Overman & Thornburg, 1992).

Progressive muscle relaxation also has been used as a stress reduction treatment (Rice, 1992). Subjects who reported high levels of recent stressful life events were assigned to an aerobic exercise group or a progressive muscle relaxation training group; both were compared with a control group. In an 11 week intervention, the aerobic exercise treatment was more effective than the progressive muscle relaxation group at reducing depression, and had a greater effect for those subjects with initial scores indicative of greater depression (Roth & Holmes, 1987).

Not all research has established a positive relationship between physical exercise and enhanced psychological variables. In a study of the effects of exercise on normal mood, 47 subjects who scored in a normal-mood range were assigned to a 13-week aerobic exercise, a non-aerobic exercise, or a wait-list control group. No significant differences were found among treatment groups, between sexes, or across time in negative (depressive) mood or positive (euphoria) mood (Lennox, et al., 1990). Although past research had indicated

decreases in depressive symptoms after ongoing aerobic exercise treatments (Folkins & Sime, 1981), the exercise treatment in this study did not have a comparable effect in elevating normal mood in normal adults. The researchers concluded that more enduring positive mood states were perhaps less susceptible to exercise than the temporary and proximal "runner's high" often attributed to exercise. This finding was substantiated in the reviews by Hinkle (1988, 1992).

The relationship between physical and psychological fitness may be causally linked, yet one experimental study (Heaps, 1978) produced findings that may extend or challenge such explanations by suggesting that one's concept about his or her physical self is the key determinant of psychological fitness. Fifty-six male college students were assigned a confederate who would perform a single 12-minute running treatment. The subjects were randomly assigned to four treatment groups based upon positive or negative social feedback and positive or negative physical feedback provided by the confederates. All subjects completed a battery of tests. Those subjects who were provided feedback that facilitated their perception that they were physically fit had significant scores in positive self-acceptance and negative hypochondriasis. Additionally, when the effect of actual fitness was statistically removed, those subjects who received either of the high social feedback treatments (i.e., "I sure had trouble keeping up with you. You are in good shape.") had significantly better scores on self-acceptance, lack of manifest anxiety, and positive body cathexis when compared to the low-social feedback treatment (i. e., "You sure had trouble keeping up with me. You must be in bad shape."). Heaps (1978) suggested that it is the assessment of the physical self improving that causes improvements in psychological fitness, rather than the physical improvements themselves. Additionally, these findings suggest that a positive physical self-concept increases the relationship between "a person's physical self-estimate and personal self-attitudes" (Heaps, 1978, p. 404).

The results of the research reviewed here suggest a strong correlation between physical and mental health. In particular, these studies show how mental health can be improved through physical activity. Increases in self-esteem, creativity, and body image have been associated with physical activity (Hinkle, 1992, 1993). Decreases in depression and state anxiety have also been found to be associated with physical exercise interventions. In addition, a positive physical self-concept was shown to be positively related to psychological fitness. In the next section, the effects of physical exercise and fitness on work variables are addressed.

Worksite Measures of Physical Wellness

Increased job performance as a result of enhanced physical fitness is a common assumption behind worksite wellness programs. Dependent variables commonly selected to measure job performance in investigations of worksite wellness programs include absenteeism, tardiness, job turnover, health-care claims, doctor visits, on-the-job accidents, and work productivity (Chenoweth, 1983). Representative studies of the effects of wellness programs interventions are reported in the section on wellness programs, presented later in this chapter.

In a comprehensive review of international research on physical fitness, absenteeism, and work performance, Donoghue (1977) cited several studies indicating both increases in physical fitness and productivity. Risk factors for coronary artery disease were reduced, absenteeism declined by as much as 50%, accident frequencies decreased by 30% to 50%, and doctor visits were less frequent. Some participants in these organization-sponsored fitness programs reported improved job attitudes, although this finding was not widespread. Productivity was reported to increase 2-5% among more athletic workers. Donoghue (1977) concluded that regardless of methodological flaws in the research, there is empirical evidence for a relationship between improved fitness and improved job performance.

Occupational Wellness Factors

Little research emphasis has been focused on occupational wellness as a total concept; a review of computer information bases in business, psychology, and education (counseling) revealed one reference to occupational wellness. This may be due in part to constraints of nomenclature and the disparity between the holistic concept of occupational wellness and more discrete concepts such as job satisfaction (Locke, 1976), work adjustment (Dawis & Lofquist, 1984), and vocational maturity (Super, 1957). The career and life development approach of Super (1957, 1990) does conceptualize the reciprocal impact of career choice and development among other life roles (i.e., student, parent, leisurite, citizen), and thus may frame the most holistic and integrated approach to occupational wellness from among the discrete career and occupational development theories. Adlerian theory and the holistic wellness perspective (Witmer & Sweeney, 1992) suggest that occupational wellness includes satisfactory work accomplishment which makes a contribution to society. Occupational wellness also includes balancing and integrating other major life tasks (spirituality, self-regulation, love, and friendship). The next section examines relevant concepts of occupational wellness, including the relationship of the worker and the work environment, work and health, and work performance.

The Worker and the Work Environment

Discrete concepts have been used to study the relationship between worker, job, and employing organization including job satisfaction, job involvement, motivation, personality matched to job requirements, and organizational commitment (Whittaker, 1987). The concept of *central life interest* has been used to explain the relative importance of work and non-work experiences as sources of life enjoyment. Some workers have reported positive levels of job satisfaction even though the jobs themselves are not intrinsically rewarding; this condition has been explained by a highly rewarding central life interest (such as a hobby or family) which the work supports (Dubin, 1956). This concept contributes to a

working definition of occupational wellness, in that work and non-work experiences are appraised and psychic balance and satisfaction are found between them.

Job involvement refers to the worker's focus on the job or identification with his or her work (Lodahl & Kejner, 1965). Dorn (1992) suggested that many people separate their career lives from their personal lives resulting in a problematic dual identity. In discussing the causes of this dual identity, Dorn (1992) stated:

...There has been an overemphasis in our culture on the encouragement to identify and select career paths that offer a high degree of monetary reward and job security and a deemphasis on pursuing occupational environments that provide for a high degree of congruence between the individual's interests and the occupational environment, as well as job satisfaction...[More] often than not, the absence of congruence and job satisfaction lead to a sense of void, usually within the occupational environment, and then outside of it (p. 176).

Dorn cited Roe (1972) in concluding that an unsatisfying vocation may contribute to the detriment of emotional well-being. The integration of career and personal identity was considered essential for the development of total wellness and a distinct area in which counselors can be effective in facilitating client functioning (Dorn, 1992).

Job involvement as a predictor of career salience was not found to be differentially predictive based on gender, although the mean scores for job involvement were significantly different for men and women (Sekaran, 1982). The extent of work role interference contributed by the family role, and the incompatibility between parent and work role responsibilities explained the extent of job involvement in another study (Thompson & Blau, 1993). These studies lend some credibility to the hypothesis that job involvement may be influenced by social expectation based upon gender roles (i.e., women exhibit less job involvement due to social pressure to parent and attend to domestic chores).

Personality - Environment Congruence

Congruence between personality and the work environment is a major component of Holland's (1992) theory of vocational choice, and also could be considered to contribute to occupational wellness. Holland's theory proposes that vocational options may be

categorized based upon personality types, and advances the concept that distinct working environments can be categorized upon the same personality dimensions (Costa, McCrae, & Holland, 1984). Holland's six dimensions of personality and environment are Realistic (denoted by R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C), known in composite form by the acronym RIASEC. These dimensions are placed on a hexagon; adjacent dimensions are theoretically more highly correlated, while opposite dimensions are least correlated. In actuality, this proposition holds up fairly well; correlations between adjacent dimensions range from .40 to .71, while correlations between opposite dimensions range from .34 to .39 (Weinrach & Srebalus, 1990).

The congruence between an individual's personality and the job environment in which he or she works bears significance on several key variables according to Holland's propositions. "Occupational achievement, stability, and satisfaction will depend on congruence between one's personality and the environment in which one works" (Holland, 1992, p. 10). Further, the appropriate fit between person and environment is self-reinforcing and thus more satisfying to the individual. On the other hand, "the greater the discrepancy between people's personality patterns and environmental patterns, the more dissatisfying, uncomfortable, and destructive these [person-by-job] interactions become" (Holland, 1992, p. 10). Research into these propositions has been generally, but not universally, supportive (Holland, 1992).

The relationship between congruence, job satisfaction, and mental health was examined in one study. Mental health had a highly significant relationship with job satisfaction, meaning that the better the mental health of the subject, the more satisfied the subject was with his or her job. Additionally, a significant negative relationship was found between psychophysical symptoms and congruence (Furnham & Schaeffer, 1984).

Holland's concept of congruency and its relationship with vocational maturity (defined as a clearly differentiated and consistent personality pattern) was the focus of

another study. Both congruency and age were significant predictors of vocational maturity. Interaction effects between differentiation and congruency were also found (Guthrie & Herman, 1982). The results of age as a predictor are explained by propositions (Super, 1957, 1990) that vocational maturity is a developmental process.

The concept of the person-job fit was used by Caldwell and O'Reilly (1990) as an alternate explanation of Holland's congruence theory. They hypothesized that work outcomes could be explained by the congruence between the individual and job requirements. A test of person-job fit was performed using seven groups representing a variety of jobs and occupations. Job performance and satisfaction were shown to be strongly related to overall person-job fit.

Tranberg, Slane, and Ekeberg (1993) performed a metaanalysis of 27 studies on job-interest congruence. The results contradicted Caldwell and O'Reilly's conclusions: interest congruence was not significantly related to job satisfaction. Congruence between interests and work environment was an insufficient predictor of job satisfaction. The researchers concluded, however, that congruence between interests and work environment may be more important for some types of people (i.e., Social types) than for others in the RIASEC hexagon.

The significance of Holland's emphasis on enduring personality types seeking matching vocational environments is noteworthy. In order to test the assumption that interest inventories that report RIASEC scales do in fact measure personality, Costa, McCrae, and Holland (1984) correlated adult scores from the Self-Directed Search (Holland, 1979) with profiles represented by the Neuroticism-Extraversion-Openness model of personality. Although Neuroticism correlated with minimal significance on only two scales (Artistic for men; Social for women), Extraversion and Openness to Experience correlated significantly and in predicted directions on Artistic, Social, Enterprising, and

Conventional scales. Such correlations lend credibility to the claim that the Holland typology does indeed indicate personality factors.

Work and Health

The relationship between work and health is one of great concern for many researchers. The federal government estimated that 100,000 workers die each year from job-related diseases, and 390,000 are affected by some type of job-related illness (Rice, 1992). Economic losses due to stress-related illness and disability exceeded \$32.8 billion annually (Rice, 1992).

Job stress, the lack of "harmony between the individual and his [sic] work environment...is one of the most universal and intense kinds of stress experience" (Pelletier, 1977, p.90). Detailing the concept of job stress, its causes, various coping mechanisms, and the effects of stress are beyond the scope of this investigation. Nonetheless, job stress does fit into the larger occupational wellness concept, so brief attention to it is warranted. Job stress may come from several sources such as job conditions, role ambiguity, interpersonal factors, career development issues, organizational-structural constraints, changes in organizational structure (i.e., downsizing, restructuring), and the interface of home and work (Rice, 1992). Individual variances in ability—and in methods employed—to cope with stress do occur, and can be said to mediate the stress response (Kobasa, 1979). Despite individual variances in coping ability and strategy, job stress has been linked to several physiological and psychological conditions, including depression, anxiety (Pelletier, 1977), hypertension and increased coronary risk factors, and ulcers (Rice, 1992).

Job Satisfaction

Job satisfaction has been studied broadly in industrial psychology; it is widely considered to be the positive affective state resulting from a positive appraisal of one's work or work experience (Locke, 1976). In discussing research into job satisfaction,

Locke (1976) cited these significant findings as consequences of job or work dissatisfaction: subjective reports of physical symptoms of ill health (Burke, 1969), high serum cholesterol levels (Sales, 1969), increased rate of mortality from arteriosclerosis at the job group level (Sales & House, 1971), decreased longevity (Palmore, 1969), and increased coronary disease (Jenkins, 1971). A more recent study linked intrinsic job satisfaction with contentment, enthusiasm, career aspiration, and skill utilization, and was negatively associated with the carry-over of job worries into non-working life (Sevastos, Smith, & Cordrey, 1992). No wonder then, that job satisfaction is often a variable of interest in research involving organizational interventions such as wellness programs (Whittaker, 1987).

Job dimensions commonly considered as contributors in the appraisal of job satisfaction include (a) the nature of the work itself, (b) pay, (c) benefits, (d) promotion opportunities, (e) recognition, (f) the work environment, (g) co-workers, (h) supervision, and (i) company and management (Locke, 1976). Examination of these variables might lead to the hypothesis that increased job satisfaction would lead to increased productivity. Studies of the relationship between job satisfaction and job performance have indicated no direct relationship (Iaffaldano & Muchinsky, 1985), although dissatisfaction with work has been associated convincingly with absenteeism, job turnover, and physical and mental health problems (Muchinsky, 1990).

While an unsatisfying job impacts emotional health and productivity, so too do termination and unemployment. Sudden termination from work often results in acute depression, confusion, and sometimes intense anger directed at the self or the employer (Bridges, 1988). Inability to find subsequent work can lead to isolation and alienation; helplessness and hopelessness can also ensue, leading to the development of physical and psychological problems (Kates, Greiff, & Hagen, 1993). The absence of employment has

been associated with higher incidences of depression and substance abuse disorders (Noer, 1993).

In a review of literature, Lofquist and Dawis (1984) summarized the following specific research findings about job satisfaction:

1. Satisfaction is negatively related to job turnover. By implication, satisfaction is positively related to job tenure.
2. Satisfaction is negatively related to withdrawal behaviors such as absenteeism and turnover.
3. Satisfaction is positively related to job involvement—that is, to preoccupation with one's job. It is not yet clear whether or not satisfaction is the precursor or the result of job involvement.
4. Satisfaction and worker alienation are negatively correlated. Worker alienation may be viewed as a form of dissatisfaction.
5. Satisfaction is positively related to morale. Morale may be viewed as satisfaction of a group of workers. Morale is negatively related to alienation; job involvement is also negatively related to alienation.
6. Satisfaction is only minimally correlated with job performance and productivity. Satisfaction and performance/productivity are best regarded as separate outcomes of work adjustment. There is some evidence that satisfaction accompanies successful performance and could be considered as resulting in part from felt success. There is also some evidence that successful performance results, in part, from job involvement which in turn, is fostered by satisfaction (more specifically, intrinsic satisfaction).
7. Job or work satisfaction is positively related to overall life satisfaction, or non-work satisfaction. Work satisfaction has been shown to be an important predictor of longevity (p. 228-229).

The concept of job satisfaction is inclusive of several discrete dimensions, but is theoretically limited to the work itself. The perception of satisfaction with the work role being balanced and integrated with other adult life roles (e.g., parent, supportive child of aging parents, citizen, recreationist) is not dealt with in the concept of job satisfaction. Thus, job satisfaction alone is inadequate in explaining the larger concept of occupational wellness.

Work Performance

Part of Adler's concept of accomplishment of the life-task of work hinges on contributing to the betterment of society (Driekurs, 1953); therefore, the achievement of work goals which help maintain society could be considered an instrumental outcome of

occupational wellness. The ability to provide economic and social benefits for the self and others, and to sustain individual psychological well-being, occurs through successful performance of work requirements (Witmer & Sweeney, 1992). This section will examine the issues involved in defining and measuring work performance, with particular emphasis on self-evaluation.

Although the measurement of work performance would seem to be an easy task accomplished through looking at objective measures of productivity, the actual task is much more difficult and complex. Work performance may be evaluated using both direct and indirect methods. Direct measures of work performance may be classified into three categories: money produced or saved, production quality or quantity, and duration of work time such as time to complete a task, tardiness, and absenteeism (Hellreigel et al., 1992). These measures would seem to be adequate to measure performance, but because work tasks required in the performance of a job vary substantially at the individual level (Hellreigel et al., 1992), comparing across jobs makes these indices improbable at best. For instance, in a manufacturing organization, unit managers may be measured by a ratio of dollars gained to dollars saved in operations. Line supervisors may be measured by the ratio of units produced to time allotted, and line workers measured by quality of production. Work performance must be measured according to factors germane to the requirements of the work for each job or position (Anthony et al., 1993). Because the specifics of performance of any one job may vary considerably from all others, models of work performance have been proposed which outline key performance elements.

Models of Work Performance

Because many jobs require multiple tasks which can be measured independently, models have been developed to explain factors which contribute to the global outcome of work performance. One model for explaining individual worker performance (Campbell & Pritchard, 1976) includes seven factors: (a) potential to perform on the job; (b) skill level

or the capability to perform the job; (c) understanding of the task(s) required; the motivation to perform the job which may be subdivided into (d) the choice to expend the effort to perform, (e) the choice of amount of effort to perform, (f) the persistence of effort in performance; and (g) environmental conditions which the individual cannot control. Motivational factors such as monetary rewards are particularly susceptible to the mediating influences of the environmental conditions on work performance (Guzzo & Gannett, 1988).

Another model for explaining worker performance by goal attainment was proposed by Locke and Latham (1990). Performance is a function of challenges and mediators and moderators of performance goals. Challenges include the difficulty of the goal, the clarity of the goal, and the belief in the individual's ability to achieve the goal. Moderators of performance include individual ability, commitment to the achievement of the goal, feedback to enable a comparison between expectation and accomplishment, and task complexity. Mediators of performance include the effort expended, the persistence to perform work tasks, and the focus of work behaviors on tasks that are consistent with accomplishing the performance goal (Hellreigel et al., 1992).

An instrument designed to test a model of work components specific to managers was developed through substantial item development, analysis, and cross-validation (Tornow & Pinto, 1976). The Management Position Description Questionnaire (MPDQ) was formulated to develop an instrument that would provide a taxonomy of management positions rather than specific job descriptions. Building upon the work of Hemphill (1960), who used a 575-item Executive Position Description Questionnaire to obtain ten job factors common to executives, the MPDQ was an effort to "develop a behavior-based management job taxonomy independent of worker traits, abilities, or other individual difference variables" (Tornow & Pinto, 1976, p. 411).

The management factors underlying the 208-item MPDQ include (1) product, marketing, and financial planning; (2) coordination of other organizational units and personnel; (3) internal business control; (4) products and services responsibility; (5) public and consumer relations; (6) advanced consulting; (7) autonomy of action; (8) approval of financial commitments; (9) staff service; (10) supervision; (11) complexity and stress; (12) advanced financial responsibility; and (13) broad personnel responsibility (Tornow & Pinto, 1976).

Content analysis of the MPDQ by other researchers resulted in the following categories (a) general information, (b) financial and human resource responsibilities, (c) decision making, (d) planning and organizing, (e) supervising and controlling, (f) consulting and innovating, (g) coordination, (h) monitoring business indicators, (i) know-how, (j) overall ratings, and (k) reporting relationships (Gomez-Mejia, Page, & Tornow, 1982). Additionally, MPDQ items were provided to 26 high-level compensation managers and an eight-factor solution emerged that captures compensable factors: (a) internal contacts; (b) human resource responsibility; (c) know-how/problem solving; (d) decision making; (e) planning; (f) impact; (g) supervising/controlling; and (h) representing (Gomez-Mejia, Page, & Tornow, 1982). The researchers concluded that solutions or models that identify compensable factors are different from those that describe the function of jobs.

Campbell (1990) proposed that work performance could be assessed by examining three key determinants: Declarative knowledge (knowledge about facts and things), procedural knowledge and skill (knowing how to use declarative knowledge), and motivation (the choice, degree, and persistence of effort expended). The exact contribution of these determinants is essentially unknowable, Campbell argues, but motivation must always occur before performance is initiated. Campbell suggested that eight specific hierarchical factors constitute a taxonomy of performance components which capture "the latent hierarchy in all jobs in the *Dictionary of Occupational Titles*" (p.708). The eight

specific factors are (a) job-specific task proficiency, or application of know-how; (b) non-job-specific task proficiency, or fundamental abilities not in the job description such as first aid to a military officer; (c) written and oral communication; (d) demonstrating effort, or working hard and with persistence; (e) maintaining personal discipline, or staying on purpose to the work; (f) facilitating peer and team performance; (g) supervision, including monitoring progress and providing feedback; and (h) management/administration, including organizing or coordinating people and resources and overcoming problems. These components have been defined in such a way as to avoid causal links, except for the possible link between "facilitating peer and team performance" and "supervision." Each of these components has several subfactors which will vary from job to job; in addition the relevance of each of the components varies across jobs. In regard to the desire to predict the global outcome of work performance,

When a single composite measure of performance is needed for decision making, the manner in which the components are combined should reflect the value judgments of the organization (or whoever the relevant parties might be) as to the goal to be served by the decision. Schmidt and Kaplan's (1971) argument that once the goal of decision making is defined the contributions of the various performance components can be scaled is well taken (Campbell, 1990, p.715).

Sources of Performance Evaluation

Sources of performance evaluation commonly used include objective data obtained through a data collection system, and information from supervisors, co-workers, customers, and self-evaluations. Supervisors are the sole source of performance appraisal in over 90 percent of cases, according to one estimate (DeVries, Morrison, Shullman, & Gerlach, 1981). Performance appraisals by supervisors have been criticized as being susceptible to several influences which limit their accuracy (Anthony et al., 1993). First, supervisors often have a limited exposure to the employee's work practices. Second, limited objective data about work performance may be caused by inadequate data collection systems. Third, objective criteria concerning a job's actual task requirements may not be

available with which to compare performance; discrepancies between job descriptions and job requirements are not uncommon. Fourth, non-volitional errors in evaluation influence the accuracy of assessing individual work performance. These errors include halo effects, stereotypes, attributions about the causes for performance, recency effects, leniency or strictness errors, and central tendency errors (Anthony et al., 1993).

Self-Evaluation of Work Performance

As organizations move to more participative and self-managed paradigms of functioning, the ability of employees to get feedback and evaluate their own efforts becomes more important (Senge, 1990). In current management practices (Anthony et al., 1993), employee self-evaluations may be used to determine discrepancies between employee and supervisor ratings and therefore serve as a tool to stimulate feedback. Another use for self-evaluations includes examinations of perceived strengths and weaknesses which is useful for employee development (Anthony et al., 1993). From a productivity and cost-containment perspective, the ability to assess self-performance will facilitate self-management and reduce the need for layers of management to monitor and direct employee behavior (Latham & Wexley, 1993).

One concern of using self-evaluations has been that employees will overrate their performance. One study has indicated that employees have a tendency to inflate their ratings when given the opportunity to rate themselves, and that the range of ratings tends to be restricted (Hoffman, Nathan, & Holden, 1991). Findings from other research has not been so critical. A study of British unit managers (N = 40) found that work performance was predicted equally well by self- and supervisor-ratings (Lane & Herriot, 1990). A meta-analysis of studies by Mabe & West (1982) involving self-appraisal indicated that test-retest reliabilities ranged from .76 to .90 over short periods and .47 to .74 for longer periods, such as six months. The researchers concluded that common beliefs are unfounded that individuals will consistently overrate their performance (Latham & Wexley,

1993) Factors which have been shown to increase the reliability of self-appraisal include making appraisals measure objective criteria, making the employee know that the self-appraisals will be verified against other measures, increasing the self-awareness of the self-rater, and skill development in self-appraisal (Latham & Wexley, 1993).

Self-evaluation may therefore be a useful tool in management as a primary means for self-management and development, and as a supplementary measure of work performance. But what about self-appraisal in research? Direct measures of work performance are often not appropriate for analysis in research. Further, performance appraisals may not be conveniently available nor forthcoming due to confidentiality concerns on the part of the participants and their employers. When direct measures of work performance are not appropriate or convenient, qualitative self-report measures of work performance may be used instead, a process that is in keeping with common practices in management science (Hellreigel et al., 1992).

Summary of Occupational Wellness Factors, Job Satisfaction, and Work Performance

The concept of occupational wellness has not been researched as an umbrella concept. Admittedly, occupational wellness is a multifaceted concept within a larger and more complex concept of total wellness. Research has supported the contention that job satisfaction is related to congruence of personality and work environment fit or match. Job involvement and morale are related to job satisfaction, which in turn is predictive of overall life satisfaction and longevity. Job satisfaction itself is only minimally related to job performance, although job dissatisfaction has been linked to higher incidences of absenteeism, tardiness, and turnover. Higher levels of satisfaction, achievement and stability are found when personal interests match the requirements of the work environment. Occupational wellness may exist with high job satisfaction or when job dissatisfaction is low, and when job involvement is balanced with other salient life roles. Health has been related to job performance. In particular, job stress has been shown to

have a significant negative impact on work performance, and has been linked to several chronic diseases such as coronary artery disease and hypertension.

The successful accomplishment of work goals, or work performance, is also a factor in occupational wellness. Work performance may be defined as the accomplishment of work goals which provides and sustains economic, social, and psychological benefit. Common factors used in models of job performance include individual ability, understanding of task requirements, and motivation. These factors may be used to explain a global outcome of work performance. Self-evaluation of work performance has been shown to be a viable means of determining this outcome, and one which may be of increasing value as organizations attempt to increase productivity and reduce costs through the implementation of self-managed teams. The workplace wellness program, another method which organizations use in an attempt to reduce costs and increase performance, is discussed in the next section.

Workplace Wellness Programs

The primary motivation for workplace wellness programs is to maintain or improve employee health (Christenson & Kiefhaber, 1988), with the purpose being to reduce costs and improve performance. Most workplace wellness programs are devised from a health education perspective (O'Donnel, 1986; O'Donnel & Ainsworth, 1984), and are oriented to physical fitness and prevention of health problems. This section examines the rationale for workplace wellness programs, the types of programs, and then provides a representative sample of literature on wellness program outcomes.

Rationale for Workplace Wellness Programs

For business and industry, the rationale for wellness programs comes from a belief that healthy employees are more productive and cost less than unhealthy ones (Blanchard & Tager, 1985; Vickery, 1986). Organizations that implement wellness programs often expect the following returns: (a) increased ability to attract valuable employees, (b)

improved attitudes and loyalty among personnel, (c) identification of the organization as being concerned with the employee's lives, and indirectly, increased productivity (Howard & Mikalachki, 1979). Reduced health insurance costs and Worker's Compensation claims can be added to this list (O'Donnel & Ainsworth, 1984). Falkenberg (1987) also suggested that a reduction in the impact of stress is a rationale for wellness programs. Adverse workplace effects such as high absenteeism, job turnover, poorer performance, lower productivity, and more frequent accidents have been correlated with high levels of stress (Galt, 1985).

Health care costs have risen dramatically in recent years and the matter of how health-care dollars are spent has become a focal point of much interest for industry. The United States Chamber of Commerce estimated in 1985 that American organizations spent almost \$2,600.00 per employee for health care (United States Chamber of Commerce, 1986). Some researchers estimate that up to 50% of illness is a result of lifestyle choices (Hettler, 1984) and is therefore preventable, thus making a strong argument for interventions directed at risk-factors which can lower health-care costs.

According to Blanchard and Tager (1985), one in ten employees suffers from two or more controllable lifestyle risk factors; additionally, in the typical organization: 29% smoke cigarettes; 15-25% are hypertensive; 20-30% are overweight; 80% do not exercise enough; 10-20% have mental health and/or substance abuse issues; 30% are prone to lower back injury; 35-45% burnout on the job. All of the health risk behaviors and outcomes reported above are preventable. A more recent study by Harris and Associates (1992) of 105,082 Americans reported that 66% are overweight, 17% are underweight, and only 17% are in a proper weight range; additionally, men are more likely than women to be obese, with one-third of men, versus one-fourth of women topping their proper weight. Of the top ten work-related diseases and injuries, four may be preventable or controllable through health promotion and wellness programs: (a) cardio-vascular disease; (b) musculoskeletal

injuries; (c) amputations, fractures, eyesight loss, lacerations; and (d) psychological disorders including neurosis, anxiety, and substance abuse (National Institute for Health and Occupational Safety, 1983).

Examining what problems can be avoided is useful for cost reduction analysis. Examining factors which promote health is also useful. In a study of 7,000 adults in Alameda County, California seven factors were found which positively correlated with health and life expectancy: (a) three meals a day and no snacking; (b) breakfast every day; (c) moderate exercise 2 or 3 times a week; (d) adequate sleep; (e) no smoking; (f) moderate weight; and (g) no alcohol or only in moderation (Belloc, 1973; Belloc & Breslow, 1972).

Organizations must pay for higher health-care costs as a result of risky health behaviors; premiums rise as well as out-of-pocket expenses. Additionally, productivity is lost through absenteeism and tardiness which result from illness, accidents and disability, and low worker morale. Claims against Worker's Compensation result in higher premiums while increased pension payments affect the balance sheet through illness- or disability-forced retirement (Cascio, 1991).

Wellness programming that reduces health risks such as smoking, obesity, substance abuse, and stress can result in savings of up to \$3000.00 per employee per year through focusing on promoting better health and preventing chronic illness and disease (Adams, 1988). While specific fiscal savings may be hard to anticipate due to each organization's unique scenario, O'Donnel and Ainsworth (1984) suggest four broad expectations which provide a rationale for organizational wellness programs: increased productivity, reduced health-care costs, reduced human resource development costs, and improved image of the organization.

First, an increase in productivity might be expected as a result of reduced absenteeism and tardiness. Better on-the-job performance may result from improved physical fitness and health. Improved morale and job satisfaction and lower employee theft

and waste might occur if employees believe that management cares about them. Better quality staff can be retained rather than losing high-quality staff through illness and resignation; high-quality staff may be attracted to a wellness-oriented organization (O'Donnel & Ainsworth, 1984).

Second, reduced health-care costs may result from healthier employees. Health insurance costs may decrease due to fewer at-risk employees. Life insurance compensation benefits may be expected to decrease as a result of healthier employees. Worker's Compensation may decrease with fewer claims made against it. Benefits in the form of wellness programs, when provided for all employees and not just management, are tax-deductible (O'Donnel & Ainsworth, 1984).

Third, human resource development costs may be reduced through lowered turnover resulting from illness. Lowered turnover reduces the costs for education and training, and reduces non-productive off-job hours for new employees. Fourth, the image of the organization, while exceptionally hard to measure or evaluate, may be enhanced through a wellness program. Free press may result from an organization meeting its weight-reduction goal, for instance. The image of an organization with fit and healthy employees may have a positive carryover to products and services. Employee and public opinion about an organization can improve when the organization is committed to healthy, optimally functioning people (O'Donnel & Ainsworth, 1984).

Types of Wellness Programs

Although there may be as many different wellness programs as there are organizational and individual needs, three levels of programs may typify organizational commitment to wellness (O'Donnel, 1986). The first level of wellness programs are designed to generate interest in wellness through informational and educational programs. The goal is to increase the awareness of health-risks and provide cognitive stimulation for engaging in alternative (e.g., healthier) behaviors. Types of educational programs include

bulletin boards, posters, employee newsletter articles, and seminars and workshops.

Health assessment and screening may also be included at this level, with a goal to provide evaluation of health risks, physical fitness, and mental health. Types of health assessment programs include cholesterol and mammogram screening, obesity measurement, nutritional analysis, and complete physical exams and wellness assessments.

The second level of wellness program follows on Level 1 by targeting life-style modification through specific programming. Interventions generally follow from a complete wellness/health evaluation. The goal is to lay out specific action steps for individuals in order to reduce health risks and to optimize wellness. Types of specific programs include smoking cessation counseling, flexibility and strength training, aerobic capacity improvement, nutritional/dietary planning and control, substance abuse and family counseling, and stress management classes.

The third level of wellness programming builds upon the knowledge base and action generated in Levels 1 and 2, and indicates a major organizational commitment to wellness. Level 3 programs seek to change the organizational environment to support and maintain lifestyle changes made during Level 2 programs. At level 3, organizational wellness programming goals are to (a) provide education; (b) health assessment, screening, and evaluation; (c) specific wellness programming; (d) wellness facilities and equipment; (e) expert instruction and counseling; and (f) a supportive organizational environment aimed at the optimization of wellness for all individuals in the organization. Level 3 types of wellness programming include organization-sponsored wellness centers with workout rooms, locker rooms, health food cafe and juice bar, wellness trainers, and a full-time wellness director. Wellness is modeled from top management, and a culture of wellness pervades the organization (O'Donnel, 1986).

Among the health promotion and wellness programs offered by Fortune 500 companies, Reza-Fourouzes and Ratzker (1985) found the frequency of program activities

ranked in the following order: (1) weight reduction (86% of companies); (2) smoking cessation (84%); (3) high blood pressure reduction (80%); (4) nutrition education (70%); (5) alcohol and substance abuse education and counseling (67%); (6) stress reduction and coping (61%); (7) personal health (56%); (8) general lifestyle education (56%). A more recent national study (Fielding & Piserchia, 1989) involved 1358 worksites divided into two classes (those worksites with less than 100 employees, and those with 100 or more employees) and samples from all geographic regions and 6 major industry groupings: (a) manufacturing, (b) wholesale/retail, (c) utilities/communication/ transportation, (d) financial/real estate/insurance, (e) service, and (f) a miscellaneous group that included construction/fishing/mining. Larger worksites were more likely to have more health promotion programs. Smoking cessation was the most prevalent activity in all worksites (35.6%) and varied from 30.1% for small worksites (<100 employees), to 40.0% for large worksites (750+ employees). In all companies, health risk assessment (29.5%), prevention and care for back problems (28.5%), and stress management (26.6%) activities were the next most prevalent. Just over 22.1% of all worksites had exercise and physical fitness activities; 53.4% of larger companies had such programming, compared with 14.7% for smaller companies. High-blood pressure control activities were found at 16.5% of all worksites, ranging from 8.8% to 48.8% of worksites, again respective to size. Weight-control activities were found in 14.7% of all companies, in 47.9% of large companies, and 8.6% of smaller companies. Nutritional education (found in 16.8% of all companies) and off-the-job accident prevention (found in 19.8% of all companies) were the remaining program activities surveyed. The researchers concluded that prevalence of an activity in any organization could not be predicted due in part to the health promotion activity life cycle (as one problem is addressed attention turns to others) and industry requirements (i.e., manufacturing had more back-problem prevention activities, while the service industry had more smoking cessation programs). Compared with statewide

surveys performed five years before this survey, the researchers also found large increases in prevalence of overall health promotion activities, smoking cessation, nutrition education, and stress management (Fielding & Piserchia, 1989).

Organizational Wellness Program Effects: Selected Findings

In an evaluation of several organizational wellness programs, Feuer (1985) found several desired effects. One, high-risk behaviors (e.g., smoking, obesity, lack of exercise) which contribute to heart disease can be treated in a positive cost-benefit manner through wellness programs. Two, smoking cessation programs of 6-12 months duration result in 15-60% of smokers abstaining. Three, programs to reduce or control weight prove successful, especially when competition and teamwork are used as methods. Four, one year after physical fitness programs were initiated, major medical costs for participants dropped 45.7%, with the average number of disability days decreasing by over 20%. These general effects are matched to some degree by reports based on individual organizations, as follow.

The Adolph Coors brewing company initiated a wellness center program in 1981 at its Denver headquarters main plant by opening a 25,000 square-foot facility (Caudron, 1990). The facility includes aerobics rooms and classes, a weight room, an indoor running track, locker rooms, and on-site health evaluation and program prescription. The company's program includes courses on anger, stress management, and relaxation which have reduced worker's compensation stress claims. Substance abuse treatment costs have declined since the advent of the wellness center facilities for family and individual counseling. In the first ten years of operation, Coors estimates that the wellness program has saved the company \$1.99 million. For every dollar spent on wellness, Coors gets a return of \$6.15. The success of the program, according to William Coors, CEO, is dependent upon creating a corporate culture that supports the wellness philosophy (Caudron, 1990).

In a report on the five-year pilot study of a Johnson and Johnson Company worksite wellness program, Bly, Jones, and Richardson (1986) found that program participants had only half the increase in hospital costs of those employees who did not participate. The average annual savings in health-care costs was \$245,079.00 for 11,406 employees in 18 states. Unfortunately, a review of the literature revealed no mention of the costs of the program, so a cost-benefit ratio cannot be established.

An eight-month study involved a fitness program of regular exercise and health education and lifestyle classes among 1,200 employee-participants of Canada Life Assurance Company (Cunningham, 1982). Participants were coded in subgroups which included "high adherents," "low adherents," "dropouts," and "nonparticipants." North American Assurance Company served as a control group. The high-adherence group showed a 42% decline in absenteeism, a rate 22% greater than all other groups. Reports to the company doctor were reduced among the high-adherent women and the control group women, with 0.1 visits during the study period for the exercisers, compared with 0.4 visits for the controls. Using self-report measures, 47% of program participants reported feeling more alert, with better rapport with coworkers and supervisors, and enjoyed their work more since starting the program. In addition, 63% of program participants reported being more relaxed, more patient, and less tired during the day since beginning the exercise program, while 32% reported no change and 5% report other unspecified changes (Cunningham, 1982).

During its divestiture process, American Telephone and Telegraph Communications (1985) implemented a pilot-study to assist employees during the transition. The Total Life Concept (TLC) included components of stress management, weight control, and interpersonal communications. Participants showed improvements in their health as compared to non-participants. Smoking cessation rates were 90% at the end of the program and remained at 53% at a 12-months follow-up. Cholesterol was reduced by 23.5

mg/dl on average. Lower back pain decreased in severity in 60% of participants; 56% reported a decrease in frequency of back pain. Physical fitness improved: 55% decreased their heart rate on a step test, and 78% increased their number of sit-ups per minute. Again, costs for the program or for health care, and productivity figures were not reported (AT&T, 1985).

Prudential Insurance Company initiated a fitness program for sedentary, white-collar workers (Bowne, Russell, Morgan, Optenberg, & Clarke, 1986). Over a five-year period, absenteeism due to sickness dropped among this group by 20%. Converted to salary costs, the exercisers showed a 32% reduction in salary costs. Major-medical costs were reduced by 46% for each exercise program participant. Medical costs were 39% less than the total office population. A savings-to-cost ratio was obtained of \$1.93 saved for every \$1.00 invested in the program.

Blue Cross and Blue Shield of Indiana initiated a worksite wellness program in 1978 that included educational components, health-risk screening, and several prescriptive programs (Gibbs, Mulvaney, Henes, & Reed, 1985). Over the almost five years of the study, health benefit payments among the participants were 24% lower than nonparticipants, a reduction of \$519.09 (in 1978 dollars) per participant (N=667). Even though some employees did not participate, the savings for all employees combined were \$143.60 per employee. The health care savings per employee exceeded the start-up cost of the program per employee (\$98.86) by a ratio of 1.45:1. If the costs are amortized over the five year period, the savings ratio increases to 2.5:1 for every dollar spent (Gibbs, Mulvaney, Henes, & Reed, 1985).

In his evaluation of wellness programs, Abramson (1988) reported that the average annual cost of an organizational wellness program was \$14.48 per employee. The benefit to the organization was \$49.81. This results in a \$3.44 savings for every dollar spent on wellness. While these figures are suggestive of the gains to be made through workplace

wellness programs, not all employees will participate. Tampson (1988) suggested that wellness program participants may be more inclined toward wellness behaviors anyway, and that the true at-risk individuals may not be participating, thus limiting maximum organizational increases in productivity and health care savings.

Summary of Workplace Wellness Programs

Business and industry use physical fitness and wellness programs to increase productivity as a primary goal. Productivity is usually measured in reduced absenteeism and tardiness and reduced turnover. Improved morale and job satisfaction is often a goal of wellness programs and is measured by the productivity factors just mentioned. A second goal is to reduce insurance costs and disability claims. Targets have been objectives such as smoking cessation, reduction of hypertension, weight control, physical exercise training to ward against musculo-skeletal injury, and stress management. The third goal of worksite wellness programs has been the reduction in human resource development expenditures, largely based upon training costs associated with turnover and administrative costs associated with absenteeism and tardiness. A fourth goal has been the promotion of organizational image directed at both the public, the employees, and potential employee recruits.

Several program types are used to achieve these goals, ranging from health-risk screening, to screening and education, to individualized wellness activity prescription, to a full onsite wellness center using screening, education, prescription, and with facilities to accomplish these goals (O'Donnel, 1986; O'Donnel & Ainsworth, 1984). Research indicates that the primary health-promotion activities are the reduction of risk factors through screening, smoking cessation, back problem prevention and care, and stress management (Fielding, 1982).

Business and industry require profitability and cost-containment. It is not surprising, therefore, that emphasis has been placed on increasing productivity (by

reducing absenteeism, tardiness, and turnover) and reducing costs through favorable health insurance premiums obtained by having a healthier, less risky workforce. Research has indicated that increased productivity and reduced costs have been associated with wellness programs that focus on health promotion and disease prevention. Causality of the wellness programs for these outcomes has not been determined, and rival hypotheses such as a Hawthorne effect are plausible. Further, the outcomes are largely mechanistic in their view of human functioning; theoretical explanations have not been provided.

The relationship of physical factors to elements of wellness such as mental health has received substantial research emphasis (Doan & Schermen, 1987; Folkins, et al., 1972; Folkins & Sime, 1981; Hinkle, 1988). A holistic model of wellness with theoretical grounding, such as Witmer and Sweeney's (1992) model, may explain the outcomes in work performance more adequately and suggest dimensions that may yield greater gains in productivity and cost-containment if these are the variables of interest.

Chapter Summary

Three wellness models were presented in this chapter. Hettler's (1984) hygienic approach was reviewed, with its emphasis on physical, emotional, intellectual, occupational, social/environmental, and spiritual dimensions. Ardell and Langdon (1989) proposed a model that emphasized self-responsibility and tailoring a wellness program to individual needs from among eight dimensions: psychological, spiritual, physical fitness, job satisfaction, relationships, family life, leisure time, and stress management. Witmer and Sweeney (1992) based their model on a foundation of Adlerian psychology, and emphasized the development of five life tasks: self-regulation, work, friendship, love, and spirituality. This model has the most utility for counselors.

Physical factors of wellness were examined in this chapter. Physical measures usually cluster in measures of physical fitness, identified by variables such as percentage body fat, blood pressure, oxygen uptake, and cardio-respiratory measures including resting

heart rate, maximum heart rate, and performance on a treadmill test. All these variables were found to be associated with improved physical fitness. The relationship of physical fitness to psychological variables was also examined. Findings generally lend credibility to the notion that improved physical fitness also improves psychological functioning, particularly with regard to self-concept, body image, creativity, and as a stress reliever. The research did not support the notion that physical activity may be an effective method to change mood or perception in normal adults. The utility of physical exercise to alter depressive mood states in distressed individuals was noted. Additionally, some evidence exists that it is not the exercise itself that alters psychological variables, but the physical self-concept which is altered as a result of interpretations of the experience, which in turn affects psychological fitness.

Factors of occupational wellness which were discussed include job satisfaction, job (role) involvement, job stress, and congruence between personality and the work environment. Congruence suggests occupational outcomes of greater satisfaction, stability and achievement (Holland, 1992). Job satisfaction (Locke, 1976), by itself, is an insufficient measure of occupational wellness in that it concerns itself with appraisal of the work and job involvement, but not with other life dimensions. Nonetheless, job satisfaction has been significantly correlated with overall life satisfaction and has been predictive of longevity. Finally, job stress was found to be associated with high levels of performance problems, such as tardiness, absenteeism, and turnover.

Workplace wellness programs were reviewed for their rationale, program types, and representative outcomes. Workplace wellness program outcomes revealed consistent cost-savings and productivity gains. Although corporate managers have emphasized worksite wellness programs to improve employee health for the purpose of health-care cost containment, recent organizational thinking from a participative management paradigm has

emphasized gaining as much from the hearts and minds of employees as from their bodies in order to stay competitive (Kofman & Senge, 1993; Lawler, 1993).

This review of the literature reveals that from a theoretical perspective, workplace "wellness" programs generally limit themselves to the physical dimension in an effort to affect the bottom line of organizational financial sheets. In a limited view, the rationale for workplace wellness programs is sound: improvements in physical fitness are associated with gains in key health variables that reduce risk for illness, injury, and chronic ailments such as hypertension and heart disease. Furthermore, improved physical fitness has been associated with reduced stress and short-term increases in creativity and mood (i.e., "runner's high"), as well as on-the-job productivity.

Occupational wellness has not been addressed in the literature as an umbrella topic. More discrete topics concerning the relationship of the worker to the work have included job satisfaction, job involvement, congruence between worker personality and the work environment, and job stress. Because personal identity and career identity are so intertwined (Dorn, 1992), occupational wellness would include effective functioning in both domains. Research supports this contention, in that congruent person-job fit is associated with higher levels of job satisfaction, achievement, and stability. Job satisfaction is minimally correlated with job performance, and significantly correlated with morale, job involvement, and overall life satisfaction.

Workplace wellness programs which emphasize physical fitness and health promotion are largely driven by cost-containment and productivity-enhancing goals. Physical fitness activities have been proven to reduce costs associated with health care. What is not known is the individual or collective contribution that physical, occupational, and other wellness factors make to work performance. Organizations are beginning to seek to develop whole persons who can participate fully in organization management, therefore, the contribution of various components of wellness to work performance becomes a

concern from a productivity and a cost/gains perspective. This study seeks to fill at least part of the void in the literature by determining the relationship of physical, occupational, and holistic wellness to work performance and job satisfaction.

CHAPTER III

METHODOLOGY

The summary of the literature reviewed in Chapter II indicates that business leaders and counselors define wellness differently. Business leaders define wellness as improved health through physical fitness which results in health care cost containment and improved occupational performance. Counselors' definition of wellness includes physical and occupational wellness but expands the concept to other dimensions, including optimal development of the individual through the integration of social functioning, love and family relationships, spirituality and purpose in life, and psychological functioning (Myers, 1992; Witmer & Sweeney, 1992). This expanded concept of wellness may be useful for business leaders seeking to develop their organization's potential in today's changing management environment. Management paradigms are evolving from a mechanistic, command-and-control model to a participative and self-regulating model (Conger, 1993; Shaw, 1992). In this latter paradigm, the functioning of all aspects of the employee are recognized as important to occupational performance (Senge, 1990).

No studies were found in the literature review in which researchers attempted to determine the contribution of physical factors or holistic wellness factors to work performance, or the relationship of wellness to job satisfaction. Research in these areas is important to determine if current wellness programs in business and industry are sufficiently comprehensive to serve their intended purposes. If research efforts show that physical and occupational factors contribute only a portion of the variance of work performance and job satisfaction, then the conceptualization of wellness by business and industry may need to be expanded. Counselors may play a vital role in the development of more holistic programs which have optimum human development as a goal.

This study addressed the void in the literature regarding the relative contribution of physical wellness variables and holistic wellness variables to work performance and job satisfaction. The design and methodology for this study are included in this chapter, in addition to a description of the pilot study, research hypotheses, instruments and subjects, and statistical procedures.

Pilot Study

The work role occupies a central place in American life (Dorn, 1992; Super, 1990). A review of the literature on career development has indicated that work role salience might be related to factors of wellness (Greenhaus, 1971; Sekaran, 1982; Shukla & Saxena, 1988). The pilot study was conducted in anticipation that work role salience (or career salience) would be positively correlated with wellness and wellness behaviors. If a strong relationship between the two factors had been found, then the inclusion of work salience in the final investigation would have been warranted.

Background

The study of life roles, and in particular the work role, becomes an area for inquiry since the counseling paradigm of wellness involves the integration and optimal functioning of various life dimensions (Myers, 1992). Life roles are the operational arenas for implementing the constructs and behaviors of wellness. Roles including those of student, worker, citizen, homemaker/family member, and leisurite often must be balanced in their time and energy demands (Super, 1990). From a career development and occupational wellness perspective, the relationship of life roles to dimensions of wellness may express important information about how individuals find balance and move toward optimal functioning.

Super's (1957, 1990) conceptualization of career and life development includes the actualizing of the self-concept in various life roles. Super proposed a model of involvement in life roles as being age-stage related. He offered the graphic Life Career

Rainbow to indicate the role involvement, role diffusion, and transition points for his identified life roles. Super (1990) proposed that the life-span of the individual is one dimension of the Life-Career Rainbow. Developmental tasks and their theorized age intervals throughout the life-span include (a) growth, 0-14 years; (b) exploration, 15-25; (c) establishment, 26-45; (d) maintenance, 46-65; and (e) disengagement, 66+ years. The salience of a role, or role involvement, will change as the individual ages in a developmental manner. In late adolescence and early adulthood, several life roles become salient (student, worker, homemaker, leisurite). Role diffusion, the extension of time and energy into these new, multiple roles, alters an individual's performance in any one role. Multiple roles may supplement role functioning by providing new arenas for developing abilities, rather than diffuse role capability, or compensate for a lack of satisfaction and competence in prior life roles. Finally, new roles may be integrated smoothly with a neutral impact on other roles (Super, 1990).

Role salience for the identified five life roles (student, worker, citizen, homemaker/family member, and leisurite) can be measured using the Saliency Inventory (Neville & Super, 1986). Behavioral or psychological orientations are measured for each life role: participation, commitment, and values expectations. *Participation* measures the amount of time and energy currently allocated for the roles. *Commitment* measures the degree of emotional energy or ownership dedicated to the roles. *Values expectations* measures the intensity of commitment of time and energy expected in the future for the roles (Neville & Super, 1986). The Saliency Inventory was further developed as a research instrument to help gain "an understanding of the impact that a change in occupation has on self-actualization; and an understanding of the degree to which, when work is not rewarding or available, other roles replace it as outlets for abilities, interests, and values" (Super, 1990, p. 219).

Role salience was rank ordered in a sample of college students (Neville & Super, 1986). Interestingly, rankings differed for each of the three salience orientations.

Participation in life roles occurred in the following rank order: leisure activity, studying, home and family, work, and community service. *Commitment* to the roles was prioritized differently: home and family, work, leisure activity, studying, and community service.

Values expectations of role salience had another rank ordering: home and family, leisure activity, studying, and community service.

Super's model (1957) would suggest that role salience appropriate for an individual's age and stage would correlate to the actualization of the self-concept. Traditional college students would be categorized in the Exploration stage according to Super's (1957; 1990) schema. The highest expected role salience would be for the leisure activity and student roles, followed by home and family, and finally, the work role. Older college students (juniors and seniors) who are transitioning through the Exploration stage of life-career development would be expected to have greater role diffusion as they begin to take on the work role, or the work role would take on a supplemental function. In preparation for living on their own and loosening the ties of parental dependency, home and family role changes would also suggest role diffusion.

If wellness behaviors had a clear relationship with role salience in the expected areas, then inclusion of role salience would be justified in the dissertation investigation. The findings of Archer, Probert, and Gage (1988) asserted that college students gain the greatest wellness from their social relationships. Pairing this with Neville and Super's (1986) rankings for role salience among college students mentioned above, overall wellness for college students would be expected to correlate to participation in life roles.

Research Hypotheses

The pilot study was undertaken to determine the relationship between factors of wellness and role salience. The specific hypotheses were:

1. Participation in leisure activity will correlate significantly in a positive direction with wellness factors.
2. Participation in the student role will correlate significantly in a positive direction with wellness factors.
3. Participation in the home and family role will correlate significantly in a positive direction with wellness factors.
4. Participation in the work role will correlate significantly in a positive direction with work, recreation, and leisure wellness.
5. Participation in the work role will correlate significantly in a positive direction with total wellness.
6. Commitment to home and family will correlate significantly in a positive direction with wellness factors.
7. Commitment to the work role will correlate significantly in a positive direction with work, recreation, and leisure wellness.
8. Commitment to the work role will correlate significantly in a positive direction with total wellness.
9. Commitment to leisure activity will correlate significantly in a positive direction with wellness factors.

Procedure

College students enrolled in two sections of a Career and Life Planning course that the author was teaching were selected as a sample of convenience. Informed consent to disclose test scores and to utilize test scores for research purposes was obtained prior to testing. Tests were administered in class to each section on the same days. The Salience Inventory was administered first, and the Wellness Evaluation of Lifestyle was administered two days later. Students were provided with their scores and an analysis and

interpretation of the scores in a classroom group discussion. Statistical analysis of the scores for this research occurred two months after the course ended.

Sample

The participants in this study were 49 full-time junior and senior class undergraduate students enrolled in two sections of a Career and Life Planning course at the University of North Carolina at Greensboro, a mid-sized, urban university. The students largely reported uncertainty about their future careers and lifestyles once they had graduated from college, self-conceptions that are consistent with the Exploration stage. Ten individuals did not complete the measures with their cohort group for a variety of reasons, including illnesses, deaths in the family, and absenteeism; these individuals' scores were not used in computing group means. The mean age of the respondents was 22 years ($SD = 1.61$). The average age of the females ($n = 24$) was 20.9 years, and that of the males ($n = 15$) was 22.46 years. Five participants were juniors (13%) and 34 were seniors (87%). Twenty-two (56%) of the students had part-time jobs. None reported having a full-time job.

Measures

The Saliency Inventory (Neville & Super, 1986) is a 170-item inventory designed to assess participation in, commitment to, and values expectations for five life roles: student, worker, community service provider, homemaker/family member, and leisurite (Neville & Super, 1986). The instrument takes 30-45 minutes to complete; respondents must choose from four possible answers indicating amount of agreement with a sentence stem (e.g., "I have spent or do spend time working").

Test-retest reliability obtained with a college student sample ($N = 85$) on the subscales ranges from .51 to .83; three scales have reliability coefficients in the .50s, six scales have reliability coefficients in the .60s, four scales have reliability coefficients in the .70s, and one scale has a reliability coefficient of .83. Alpha coefficients range from .81 to .94, calculated with a college student sample ($N = 295$).

The Wellness Evaluation of Lifestyle (WEL; Witmer, Sweeney, & Myers, 1993) was designed to measure functioning along five life tasks in nineteen subscales consistent with Adler's theory of individual psychology (Driekurs, 1954; Witmer & Sweeney, 1992). The original edition of the Wellness Evaluation of Lifestyle (WEL-O; Witmer et al., 1993) was used for the pilot study. (A revised version (WEL-R) was used for the dissertation investigation and is described later in this chapter.) The WEL-O used a five category answer format, ranging from *Strongly Agree* to *Strongly Disagree* for 114 items. It takes 15-25 minutes to complete. Eighteen subscales are reported including Spirituality; Self-Worth; Sense of Control; Realistic Beliefs; Spontaneity and Emotional Responsiveness; Intellectual Stimulation, Problem Solving and Creativity; Sense of Humor; Nutrition; Exercise; Self-Care; Gender Identity; Cultural Identity; Work, Recreation, and Leisure; Friendship; Love; Perceived Wellness; Total Self-Regulation. A Total Wellness scale sums the 18 subscales to indicate a global wellness score.

Reliability and validity analyses were conducted by the authors for the WEL-O and reported in a manual written for WEL users and researchers (Myers, Witmer, & Sweeney, 1995). Two week test-retest correlations using undergraduate students ($N = 99$) ranged from .68 to .94. Relevant subscale reliabilities were as follow: Exercise ($r = .80$); Nutrition ($r = .88$); Self-Care ($r = .94$); Work, Recreation, and Leisure ($r = .82$); Total Wellness ($r = .88$). A slight majority of the students were female ($n = 46$, 53%), while 64 (67%) were Caucasian, and 30 (30%) were Black; one student was Asian-American. The average age of the students was 21.4, and the median and modal age was 21. A majority of the students (92%) reported they did not live alone (Myers, Witmer, & Sweeney, 1995).

A sample of 723 persons was used to calculate alpha coefficients for the WEL-O. For most scales, the alpha coefficients ranged between .56 and .91. Three scales had lower alpha coefficients: Sense of Humor (.35), Gender Identity (.45) and Cultural

Identity (.34) and were revised for the WEL-R (J. Myers, personal communication, November 7, 1995).

The WEL-O sample group was largely Caucasian ($N = 580$, 80%); 93 (13%) were Black; 13 (2%) were Asian-American; six (0.8%) were Hispanic; and five (0.7%) were Native Americans; no report was provided for the remaining 3.5%. Over half the group were female ($N = 424$, 59%). Thirty-four percent ($N = 244$) were married, 58% ($N = 417$) were single, and 5% ($N = 38$) were divorced. Over half ($N = 454$, 63%) reported they lived alone. About one-quarter ($N = 171$, 24%) worked full time, and 149 (21%) worked part time; almost half ($N = 346$, 48%) were students. Over one third ($N = 264$, 37%) had completed high school, a smaller percentage ($N = 247$, 34%) reported earning a bachelor's degree, 17% ($N = 124$) had a Master's degree, and 3% ($N = 21$) had a doctoral degree (Myers, Witmer, & Sweeney, 1995).

Evidence of validity includes correlations between the WEL and another published wellness inventory, the TestWell (National Wellness Institute, 1988). Significant correlations ($N = 35$, range from .38 to .51) were found between several WEL subscales and all similar criterion subscales on the TestWell (Myers, Witmer, & Sweeney, 1995): Spirituality ($r = .43$), Emotional Responsiveness ($r = .46$), Intellectual Stimulation ($r = .48$), Nutrition ($r = .51$), Exercise ($r = .36$), Self-Care ($r = .57$), Work/Leisure ($r = .43$), Self-Regulation ($r = .40$), and Total Wellness ($r = .49$). The WEL subscale Self-Worth was not significantly related to Emotional Awareness on TestWell ($r = .33$); and the WEL subscale Sense of Control was not significantly related to the TestWell subscale Emotional Control ($r = .28$). These last non-significant findings indicate that different constructs were being measured by similarly named subscales in the instruments. Construct validity may be inferred for the WEL by acknowledging that it is based on a circumplex model that defines the characteristics of healthy persons obtained through cross-disciplinary research (Witmer & Sweeney, 1992).

Analysis

The sample was analyzed as a group. Descriptive statistics were calculated for the sample. Each hypothesis was tested by computing zero-order correlation coefficients between Salience Inventory subscales and each WEL subscale. Correlations between these subscales were tested for significance using two-tailed t-tests. Because the WEL is a behaviorally anchored psychometric instrument that considers behaviors relating to psychological functioning, only the Participation and Commitment scales of the Salience Inventory were used in this analysis.

Results

The descriptive statistics indicated that there was no significant difference between the sample group ($N = 39$) and a norm group of college students ($N = 776$) on the Salience Inventory, except on the Leisure Activity *Participation* scale. The sample group reported significantly less participation in leisure activities than the norm group. This data is shown in Table 2.

Hypothesis One stated that significant positive correlations would be found between participation in leisure activity and wellness factors. The findings did not support this hypothesis. Only stress management ($r = .32, p < .05$) and work, recreation, and leisure ($r = .39, p < .05$) had significant relationships with participation in leisure activity. Table 3 presents the data relating to Hypotheses One through Five.

Hypothesis Two stated that a significant positive correlation would be found between participation in the student role and wellness factors. The findings did not support this hypothesis. With the exception of Nutrition ($r = .40, p < .05$), no significant correlations were found for this role.

Table 2

Means, Standard Deviations, and t-tests from Salience Inventory Comparing Pilot Study Sample to Norm Group

Salience Inventory Scale	Norm Group (N=776)		Sample (N=39)		t-test
	Mean	(SD)	Mean	(SD)	
Participation in Study	27.37	(5.44)	26.18	(6.19)	3.09
Participation in Work	22.08	(6.76)	24.87	(6.34)	2.49
Participation in Comm. Service	17.85	(7.41)	18.58	(5.94)	0.60
Participation in Home/Family	25.24	(6.26)	25.76	(5.49)	0.49
Participation in Leisure Activity	30.45	(6.22)	27.02	(5.96)	-3.33**
Commitment to Study	30.25	(6.16)	28.39	(6.97)	-1.81
Commitment to Work	32.74	(5.52)	33.50	(5.79)	1.83
Commitment to Comm. Service	25.70	(7.92)	26.50	(6.45)	0.61
Commitment to Home/Family	34.25	(5.84)	36.02	(5.78)	1.81
Commitment to Leisure Activity	32.14	(6.00)	30.95	(6.15)	-1.19

** $p < .001$

Table 3

Pearson Correlations between Salience Inventory "Participation in Roles" and
WEL Subscales for Pilot Study Sample (N = 39)

WEL Subscale	Role Salience: Participation				
	Studying	Working	Commun. Service	Home & Family	Leisure Activity
Spirituality	.23	-.31	.24	.35*	-.06
Total Self Regulation	.24	-.35*	.21	.46**	.15
Sense of Worth	.23	-.21	.04	.03	.13
Sense of Control	.19	.01	.26	.15	-.19
Realistic Beliefs	-.15	-.13	.08	.40*	-.05
Emotional Responsiveness	.01	-.30	.16	.42**	.30
Intellectual Stimulation	.12	-.24	.04	.24	.16
Sense of Humor	.26	-.11	.07	.18	.07
Nutrition	.40*	-.30	.04	.38*	.18
Exercise	.12	-.18	.27	.09	.01
Self-Care	.29	-.21	.06	.33*	-.04
Stress Management	.04	-.27	.17	.47**	.32*
Gender Identity	-.02	-.27	.17	.14	.10
Cultural Identity	-.09	-.16	.18	.12	.06
Work, Rec. & Leisure	.18	-.17	.19	.53**	.39*
Friendship	.18	-.19	.22	.15	-.10
Love	.07	-.21	.22	.29	.16
Total Wellness	.23	-.32*	.25	.44**	.12

* $p < .05$; ** $p < .01$

A significant positive correlation between participation in the home and family role and wellness factors was the focus of Hypothesis Three. The findings supported this hypothesis. Several significant relationships were found between home and family role participation and spirituality ($r = .35, p < .05$), self-regulation ($r = .46, p < .01$), realistic beliefs ($r = .40, p < .05$), emotional responsiveness ($r = .42, p < .01$), nutrition ($r = .38, p < .05$), self-care ($r = .33, p < .05$), stress management ($r = .47, p < .01$), work, recreation, and leisure ($r = .53, p < .01$), and total wellness ($r = .44, p < .01$).

Hypotheses Four and Five proposed a significant positive relationship between participation in the work role and work, recreation, and leisure wellness, and total wellness, respectively. The findings did not support either of these hypotheses. A significant negative correlation was found between participation in the work role and total wellness ($r = -.32, p < .05$), as well as self-regulation ($r = -.35, p < .05$).

Examination of the findings indicated support for Hypothesis Six which proposed a significant positive correlation between commitment to the home and family role and wellness factors. A significant positive relationship was found between the home and family role and emotional responsiveness ($r = .39, p \leq .01$); stress management ($r = .34, p \leq .05$); work, recreation, and leisure ($r = .35, p \leq .05$); friendship ($r = .36, p \leq .05$); love ($r = .45, p \leq .01$); and total wellness ($r = .34, p \leq .05$). The data for Hypotheses Six through Nine are presented in Table 4.

Hypothesis Seven predicted that commitment to the work role would be significantly correlated in a positive direction with work, recreation, and leisure wellness. The findings did not support this hypothesis. Commitment to the work role was not significantly correlated with work, recreation, and leisure wellness factors.

Table 4

Pearson Correlations between Salience Inventory "Commitment to Roles" and
WEL Subscales for Pilot Study Sample (N = 39)

WEL Scale	Role Salience: Commitment				
	Studying	Working	Commun. Service	Home & Family	Leisure Activity
Spirituality	.13	-.35*	.21	.23	-.03
Total Self Regulation	.03	-.22	.23	.24	.01
Sense of Worth	.15	-.19	.02	-.10	.15
Sense of Control	.15	.11	.10	.10	-.21
Realistic Beliefs	-.11	-.20	.10	.08	-.15
Emotional Responsive.	.00	-.18	.20	.39**	.15
Intellectual Stimulation	.12	-.15	.01	-.03	-.05
Sense of Humor	.04	-.17	.08	.06	-.01
Nutrition	.03	-.32	-.03	-.10	-.21
Exercise	.00	-.12	.29	.12	-.08
Self-Care	.05	-.01	.08	.10	-.12
Stress Management	-.02	-.13	.33*	.34*	.27
Gender Identity	-.21	-.29	.16	.36*	.16
Cultural Identity	-.14	-.09	.31	.37*	.31
Work, Rec. & Leisure	-.01	-.16	.10	.35*	.28
Friendship	.07	-.05	.23	.36*	.05
Love	-.10	-.05	.20	.45**	.24
Total Wellness	.04	-.23	.24	.34*	.08

* $p < .05$; ** $p < .01$

Hypothesis Eight predicted that commitment to the work role would be significantly correlated in a positive direction with total wellness. The findings did not support this hypothesis. The correlation was negative and was not statistically significant. Commitment to the work role, however, was negatively correlated with spirituality ($r = -.35, p \leq .05$), the only significant correlation found between wellness factors and commitment to work role.

Hypothesis Nine predicted that commitment to the leisure activity role would not be significantly correlated in a positive direction with wellness factors. The findings did not support this hypothesis. Commitment to the leisure activity role was not significantly correlated with wellness factors.

Regression analysis of all salience inventory roles to wellness revealed no significant contribution of participation in or commitment to life roles to predicting the variance of wellness ($F(4,15) = 1.41, p < .23$). Participation in home and family came the closest ($t(21) = 1.58, p < .13$).

Discussion

The results of the pilot study indicated significant correlations between participation in and commitment to several roles and many of the wellness subscales. The number of significant positive correlations between Home and Family role salience and wellness factors were striking when contrasted to the lack of significant relationships between other variables. Unexpectedly, the student and leisure activity roles had few significant positive relationships. Contrary to expectations, the lack of significant positive correlations between the work role and wellness factors was noteworthy.

The number of significant correlations of WEL subscales with the home and family role was supported by the model of wellness as described by Witmer and Sweeney (1992). Participation and commitment in the home and family may serve an important role in allowing the establishment and implementation of spirituality, realistic beliefs, emotional

responsiveness, self-care, stress management, and self-regulation and overall wellness. Additionally, the home and family role is where the fundamentals for friendship are formed and love relationships learned, expressed, and reinforced. It is not surprising, then, that the home and family role has such a significant correlation with the Love and Friendship scale on the WEL. For these college students, the home and family role is perhaps the one role that provides stability in this time of impending occupational and leisure activity change. The home setting may provide a place in which to relax, manage stress, express emotions, build friendships and love, and allow the individual to reconnect with his or her purpose in life, all of which are wellness behaviors.

Participation in leisure activity was related to work, recreation, and leisure wellness. This finding was not surprising given the overlap in the constructs of the scales. The relationship of stress management to leisure activities was also expected, given the evidence that involvement in leisure activities has been linked as a moderator of the perception of stress (Rice, 1992). Further, the balance of work and leisure could be accounted for through the participation in leisure activity.

The negative correlation of participation in the work role with self-regulation and total wellness could be explained by the difficulty many in the sample of students had balancing full-time student status with part-time work status. The burdens of the additional (work) role which allowed them to provide for a part of their education and other living expenses might have acted in such a way as to interfere with the development of wellness through self-regulatory behavior. An alternative interpretation would be that uncertainty about the work role for this group led them to register for a career and life planning course. The anxiety associated with uncertainty might have been expressed in the negative relationship between the work role and wellness and self-regulation. Additionally, the anxiety that many of these students had about graduating and making a livelihood could

hinder the finding of meaning and purpose in work, thus explaining the negative correlation of spirituality to the salience of participation in a work role.

The Adlerian theory upon which the wellness model is based maintains that preparation for contributing to society through education is an element of work. The lack of positive relationships between participation in the work role or the student role and wellness factors may be due to the investment these students had in obtaining satisfaction from these roles. If the part-time jobs that the students possessed, which traditionally are low-paying, low-responsibility jobs, or the role of student did not provide appropriate life-space for actualizing the self-concept, then the hypothesized relationship would not be present. Unfortunately, a rating on the enjoyment and "fit" of the job or the student role for the student was not obtained. Future research may be necessary to resolve this issue.

This study yielded significant findings about role salience relative to wellness. However, the expected relationship between wellness and specific work role salience was insufficient to justify inclusion of a measure of career/work salience in the larger-scale investigation. Further, the average time necessary to complete both the instruments, almost two hours, appeared to be a serious limitation for adult volunteers. The relationship of wellness to other career and work aspects (work performance and job satisfaction), therefore, became the focus of the dissertation investigation. The hypotheses of the dissertation investigation will be presented next.

Dissertation Hypotheses

In order to answer Research Question One ("What is the proportion of variance of work performance explained by physical wellness?"), the following hypotheses were tested:

- 1a. Physical wellness, as measured by three subscales ("Exercise," "Nutrition," and "Self-Care") of the Wellness Evaluation of Lifestyle-Revised (WEL-R; Witmer, Sweeney, & Myers, 1995), will explain a significant amount of the variance of work performance.

- 1b. Physical wellness, as measured by four scales of the Physical Self-Description Questionnaire (PSDQ; Marsh, Richards, Johnson, Roche, & Tremayne, 1994), will explain a significant amount of the variance of work performance (WP). The four self-concept scales are "Physical Activity" (PA), "Endurance" (E), "Strength" (S), and "Health" (H) .

In order to test Research Question Two ("What is the proportion of variance of work performance explained by occupational wellness?"), the following hypothesis was tested:

2. Occupational wellness, as measured by the subscale "Work, Recreation, and Leisure" (WRL) of the WEL-R will predict work performance to a greater extent than physical wellness.

In order to test Research Question Three ("When combined, how well do physical and occupational wellness predict work performance?"), the following hypothesis was tested:

3. The combination of physical and occupational wellness, as measured by these dimensions of the WEL-R and the PSDQ, will explain a greater proportion of the variance of work performance than either of these two factors alone.

In order to test Research Question Four ("What is the relationship of various wellness components and physical and occupational wellness to work performance?"), the following hypothesis was tested:

4. Various wellness components, as measured by the WEL-R, will positively predict work performance to a greater extent than physical and occupational wellness as measured by these subscales of the WEL-R and the PSDQ.

In order to test Research Question Five ("What is the proportion of variance of job satisfaction predicted by physical wellness?"), the following hypotheses were tested:

- 5a. Physical wellness, as measured by three subscales ("Exercise," "Nutrition," and "Self-Care") of the WEL-R, will explain a significant amount of the variance of job satisfaction.
- 5b. Physical wellness, as measured by the four scales of the PSDQ, will explain a significant amount of the variance of job satisfaction.

In order to test Research Question Six, ("What is the proportion of variance of job satisfaction explained by occupational wellness?"), the following hypothesis was tested:

- 6. Occupational wellness, as measured by the WRL subscale of the WEL-R, will predict job satisfaction to a greater extent than physical wellness.

In order to test Research Question Seven, ("When combined, how well do physical and occupational wellness predict job satisfaction?"), the following hypothesis was tested:

- 7. The combination of physical and occupational wellness, as measured by these dimensions of the WEL-R and the PSDQ, will explain a greater proportion of the variance of job satisfaction than either of these two factors alone.

In order to test Research Question Eight ("What is the relationship of physical wellness, occupational wellness, and various wellness components to job satisfaction?"), the following hypothesis was tested:

- 8. Various wellness components, as measured by the WEL-R, will positively predict job satisfaction to a greater extent than physical and occupational wellness as measured by these subscales of the WEL-R and the PSDQ.

Participants

Participants for this study were adult volunteers scheduled to participate in management development activities at Farr Associates, Inc., a behavioral science consulting firm located in Greensboro, North Carolina. Participants of these management development activities were primarily managerial personnel employed in a variety of industries, including manufacturing, finance, telecommunications, entertainment, and

computer technology. Managers represent a diverse population. People in management positions work in almost all environments from the military to the arts to corporations to public service agencies (Holland, 1992). Managers exist at all levels of the organizational hierarchy, even the lowest, including self-managed work teams (Lawler, 1993). A manager has been discriminated from others by the roles that he or she enacts, divided into interpersonal roles, informational roles, and decisional roles (Mintzberg, 1973). It may be said, then, that a manager is a person responsible for management activities, usually including the supervision of people.

The managers sampled for this study came from a Farr Associates corporate client base of approximately 36 organizations dispersed throughout the United States and Canada. The bulk of the organizations represented were located in the southeast, upper midwest, and mid-Atlantic area of the United States. From Cohen's power analysis (1977, pp. 414-415), the minimum sample size to detect a small effect ($R^2 = .02$, alpha .05, power = .80) is 750 subjects, a moderate effect ($R^2 = .13$, alpha .05, power = .80) is 100 subjects, and a large effect ($R^2 = .35$, alpha .05, power = .80) is 43 subjects. Thus, because at least a small to a moderate effect would be of interest, a sample size of at least 150 would be necessary to detect a significant R^2 of .10 (Cohen, 1977). The final sample size was 161 participants, as discussed in Chapter IV.

Procedures

Participants were obtained through the cooperation of Farr Associates, Inc. which gave permission for access to its management training participants (Appendix A). Some participants who attended Farr Associates activities came from professions other than business (i.e., education, not-for-profit organizations); however, only those individuals who are managers in for-profit organizations were included in the study. This selection procedure was accomplished by coordinating the survey mailing list with the participant reservation profile maintained by the Farr program coordinator. Packets were mailed two

to four weeks before the participant's scheduled training. A Farr Associates consultant with eight years' experience in direct-mail marketing participated in the writing of a cover letter (Appendix B) to enhance the response rate. To achieve the necessary sample size, data collection took place from late-April to mid-September, 1995.

Each respondent completed a packet of paper-and-pencil instruments which included a consent form (Appendix C), a demographic questionnaire and four psychometric instruments, all of which are discussed in the following section. The participants were informed that their responses would be kept confidential. The packet could take 25 - 40 minutes to complete. The demographic questionnaire was the last form to complete. It has been proposed that honesty on the demographic form is increased by placing it last (Sheatsley, 1983).

Completion of the survey was voluntary. Respondents were informed that they would receive feedback about their overall wellness in the form of a summary of their scores (compared to the norm group of managers) and a brief wellness workbook (Myers, Witmer, & Sweeney, 1994). The latter was designed to help them understand their scores and begin to develop a plan to improve their overall wellness. Additionally, results of the research study were provided to interested subjects in the form of an executive summary written by the researcher, and which included implications for management.

Instruments

Participants completed a packet containing a demographic questionnaire and four paper-and-pencil measures of the variables under study. Measures of the independent wellness variables were obtained from the Wellness Evaluation of Lifestyle-Revised (WEL-R, Witmer et al., 1993) attached in Appendix D. Measures of the independent variable *physical wellness* were obtained by three subscales of the WEL-R: "Exercise," "Self-Care," and "Nutrition." An additional measure of physical wellness was obtained by scores on Endurance, Strength, Physical Activity, and Health self-concept scales of the

Physical Self-Description Questionnaire (PSDQ, Marsh, Richards, Johnson, Roche, & Tremayne, 1994), attached in Appendix F. A measures of the independent variable *occupational wellness* was obtained from the subscale "Work, Recreation, and Leisure" of the WEL-R. The dependent variable *job satisfaction* was measured by the Job Satisfaction Blank (JSB; Hoppock, 1977) attached in Appendix E. The dependent variable *work performance* was measured with a self-report questionnaire based on scales by Campbell (1990) attached in Appendix G. The demographic questionnaire elicited information about individual characteristics, and is attached in Appendix H. Each of the measures are described in the following section.

The Wellness Evaluation of Lifestyle-Revised

A revised version of the Wellness Evaluation of Lifestyle (WEL-R; Witmer et al., 1995) (Appendix D) was used for the dissertation investigation. The WEL-R used the same questions as the 114-item WEL-O, plus 17 extra items in six scales (Realistic Beliefs, Sense of Humor, Nutrition, Exercise, Gender Identity, and Cultural Identity). These extra items were included to enhance subscale reliabilities (J. Myers, personal communication, November 7, 1995). The resulting alpha coefficients for the WEL-R on these scales were Realistic Beliefs (.63), Sense of Humor (.71), Nutrition (.77), Exercise (.77), Gender Identity (.72), and Cultural Identity (.67). The remaining scales and their corresponding alpha coefficients were Spirituality (.87), Total Self Regulation (.83), Sense of Worth (.67), Sense of Control (.56), Realistic Beliefs (.63), Emotional Responsiveness (.65), Intellectual Stimulation, Problem Solving, and Creativity (.51), Self-Care (.56), Stress Management (.60), Friendship (.80), Love (.82), Perceived Wellness (.50), and Total Wellness (.88).

The norm group was comprised of business communications, organizational behavior, and career and life planning students in two large mid-Western Universities. The mean age was 31.4, and the range in age was 18 to 85. Just over sixty-nine percent of the

group were women. The most common educational level reported was high school graduate (51.7%). The next most frequent educational level was a bachelor's or Master's degree (25.5%), while 20.1% reported a trade school or associate's degree; 2.4% had a professional degree or a doctorate, and .3% did not graduate from high school.

The majority of the sample was Caucasian (78.4%). Of the remaining minority, 7.2% were black, 6.6% were Asian-Pacific Islanders, 1.8% were American Indian, 1.5% were Hispanic, and 4.2% either did not report ethnic/cultural background or reported it as "other." Most of the sample lived with someone else (82%), although 68.2% were not married. Twenty-four percent were married, and the remaining 7.8% were separated, divorced, or widowed. Most of the sample (40.8%) lived in a mid-sized town (between 15-50,000 people); 19.5% lived in a small town (2,500-15,000 people), 16.2% lived in a large town (50-100,000 people), 14.7% lived in a metropolitan area (over 100,000 people), and 8.4% lived in a rural area (less than 2,500 people).

The most frequently cited employment status was student (53.5%); 34.8% worked either full or part-time (including retired, part-time workers). Nine percent were retired and non-working, and 2.7% did not specify their employment status. The most frequently cited occupation was "other" (55.6%, probably due to "student" status); 12.9% were managers or professionals, 12.9% were in service occupations, 12% were in technical, sales, or administrative positions, and the remaining 3.6% were either machine operators or in skilled trades (1.8%), in farming and forestry (.3%), or did not report (1.8%).

Physical Self-Description Questionnaire

The Physical Self-Description Questionnaire (PSDQ; Marsh & Redmayne, 1994; Marsh et al., 1994) (Appendix F) measures the construct of physical self-concept, and is an outgrowth of research into multi-dimensional self-concept. The PSDQ was developed due to consistently differentiated responses in Physical Ability and Physical Appearance scales from other scales (i.e., Academic) of the Self-Description Questionnaire (Marsh et al.,

1994). Prior research established the relationship between physical self-concept and physical fitness ($r = .76$; Marsh & Redmayne, 1994). Although the PSDQ was designed for adolescents, Marsh argued that it should be appropriate for adults, since "Relations between self-concept and external criteria typically become stronger with age" (Marsh & Redmayne, 1994, p. 53.)

The initial PSDQ was established with a sample of adolescent girls in a physical education class ($N = 105$). Confirmatory factor analysis (CFA) demonstrated support for the scales (Marsh & Redmayne, 1994). The current version of the PSDQ was established with two samples of high school students ($n = 315$ and $n = 395$). CFA models for the eleven scales demonstrated goodness of fit. Convergent and discriminant validity were confirmed with concurrent administration and scoring of two other physical self-concept scales (Marsh et al., 1994).

Only four scales of the PSDQ were used for this study out of the full 70-item instrument with eleven scales. Each item consists of a declarative statement and a 6-point true-to-false response scale. Only three scales from the original PSDQ produced direct correlations with criterion measures of physical fitness in a prior study (total $r = .76$): Physical Activity ($r = .44$); Endurance ($r = .75$), and Strength ($r = .55$) (Marsh & Redmayne, 1994); these scales are the ones included in this study. The Health scale was added for this study as another measure of physical wellness. The total number of items used in this study was 26: six items each for the Physical Activity, Strength, and Endurance scales, and eight for the Health scale.

Job Satisfaction Blank

Hoppock's (1977) Job Satisfaction Blank (JSB, Appendix E) was used to measure the dependent variable job satisfaction. Unlike other job satisfaction measures which are quite specific about job characteristics that might yield satisfaction, the JSB allows the respondent to assess job satisfaction based upon whatever job factors he or she deems

relevant. The JSB is quite brief, just four items, and has been used in numerous studies since its initial development (Cook, Hepworth, Wall, & Warr, 1981).

The JSB yields a single score based upon the summation of the weighted response to the four items. Each item consists of a statement or a question to which the respondent is offered 7 response choices. Each question has equal weight. Scores range from 4 to 28. Low job satisfaction is indicated by scores below 15; moderate satisfaction is indicated by scores from 16 to 22; and high job satisfaction is indicated by scores from 23 to 28.

Hoppock found the JSB to be reliable using a split half method ($r = .93$, $N = 301$). A more recent investigation obtained coefficient alphas of .76 to .89 for four samples (McNichols, Stahl, & Manley, 1978). The JSB has been shown to have convergent validity with other measures of job satisfaction (Lofquist & Dawis, 1984). Principal component factor analysis and correlation matrices provided evidence that the JSB is indeed measuring a single factor, and that the equal weighting of each item and summing the item values is the best means to capture as much information as possible (McNichols, Stahl, & Manley, 1978). Finally, different group means have been obtained using the JSB. For a management group in a public service company, the mean score was 21.25 ($N = 360$), while among Department of Defense civil service employees ($N = 17,110$) across all grades and occupational specialties, the mean score was 19.31. This provides evidence that "people of higher grade or higher hierarchical level have higher job satisfaction than people at lower levels...senior managers were significantly more satisfied than junior managers" (McNichols, Stahl, & Manley, 1978, p.739).

Work Performance Scale

Work performance was measured by an 8-item manager work performance scale derived from factors identified by Campbell (1990). Campbell's job taxonomy includes job specific task proficiency, non-job-specific task proficiency, written and oral communication, demonstrating effort, maintaining personal discipline, facilitating peer and

team performance, supervision, and management/administration. A single global rating was used to elicit report of the individual's supervisor's rating of performance for the past performance review.

The WPS (Appendix G) used a magnitude rating procedure outlined by Lodge (1981). In this procedure, a reference line was presented which is said to represent the "typical" performance for persons who hold the same level position. The individual was asked to draw their own line which indicates their self-appraised performance relative to the typical performance of others. This procedure required that the individual cognitively construct the typical performance of others in the same or similar job positions, and then compare his or her own performance with that of others. The magnitude value was calculated to indicate the relationship between the reference line and the response line. Response lines were measured in millimeters and the magnitude value was obtained using the formula:

$$\text{Magnitude Value} = 10 * (\log_{10}(\text{resp}) - \log_{10}(\text{ref}))$$

where

resp = the total length of the individual response line

ref = the total length of the reference line.

A global measure of work performance was then calculated by summing the individual item scores.

Although magnitude scaling may seem slightly unorthodox, it has several advantages over Likert rating schemes (Lodge, 1981). First, all individuals have the same perceptual anchor point: the "typical" person is constructed in each individual's mind and comparisons are based on this construction. This differs from an example imposed by the investigator, which may not fit the individual's concept of others, thus causing confusion and difficulty in fitting perceptions of an unknown concept with one's own experience. Second, magnitude scaling allows maximum data capturing; discriminant data is not lost

due to reducing responses to a set number of categories, or limiting low or high opinions. Third, reliabilities using magnitude scaling are consistently high, with correlation coefficients between estimates and criterion variables in the 0.90s. With such high reliabilities, only one item is needed for each variable in question. Fourth, unlike categorical ratings which inadvertently affect the response by forcing judgments into categories, magnitude scaling allows the respondent to express directly his or her opinion in an unrestricted fashion.

Perhaps the most important advantage is that magnitude scaling is an easy task, and mirrors the cognitive processes that individuals perform when making comparisons. Magnitude scaling has been validated through numerous psychophysical studies where estimation of physical stimuli such as loudness, warmth, or line length have been required. The methodology suits the estimation of social opinion where comparisons of value parallel that of psychophysical estimation. Magnitude scaling has been used to measure such social opinion variables as status and prestige, strength of religious attitude, political opinion, and life stress (Lodge, 1981).

Demographic Questionnaire

A basic demographic questionnaire (Appendix H) solicited information about the individual respondent. Questions included age, gender, education, and ethnicity. Demographic information germane to this study also included job level categorization, self-perceived/self-rated health, and management environment type.

Data Analysis

All data were entered into a computer database, then statistical procedures completed using the Statistical Package for the Social Sciences (SPSS) computer program for the MacIntosh™ (SPSS Inc., 1995). A summary of the demographic data was compiled via descriptive statistics. The purpose of this summary was to indicate the makeup of this group of respondents in terms of key demographic characteristics. Means and standard

deviations were calculated and presented for key variables. Regression analyses were conducted to test each hypothesis. Variables were entered into the regression equation in sets and the proportion of variance and change in R^2 were tested for significance. The following chapter presents results of the data analyses.

CHAPTER FOUR

RESULTS

This chapter presents the statistical results of the research project. Demographic data describing the sample are presented first. Descriptive statistics were computed for each instrument to determine the psychometric properties of each instrument used with this sample. These descriptive statistics are presented next. Presented last are the regression analyses of independent and dependent variables and a summary of the findings.

Description of the Sample

Four hundred questionnaires were mailed and 206 were returned for a response rate of 51.5%. Forty-five questionnaires were eliminated from analysis; 27 respondents could not be classified as managers, while eighteen respondents returned questionnaires with incomplete responses of a nature which precluded analysis (i.e., incomplete/missing data, all instruments not returned). The final sample size of 161 valid cases represents 40% of the original mailing.

This sample is compared to a national population of managers in Table 5. The sources used for comparisons (Ambry & Russell, 1992; Waldrop, 1993) obtained their data from unpublished 1992 United States Bureau of Census (USBC) papers. It should be noted that the USBC apparently used a broad definition of manager, such as "a person who supervises projects or people." The raw numbers of "managers" according to the USBC, (over 26 million) would represent one tenth of the entire United States population, including children and non-workers such as retirees. With awareness of this definition of manager, differences between the sample and the national population of managers were evident in several demographic areas: gender, age, ethnicity, marital status, and education.

Table 5

Comparisons of the Sample with a National Population on Key Demographic Variables

Variable	Sample %	Population %	Sample Difference %
	n=161	N=15,724K ¹	
Gender			
Male	67.7	57.0	+10.7
Female	32.3	42.0	-9.7
Age			
under 35	28.0	30.5	-2.5
35-44	37.0	30.8	+6.2
45-54	26.0	22.9	+3.1
over 55	9.0	15.8	-6.8
Marital Status			
Married	80.7	69.2	+11.5
Single, separated, divorced	19.2	28.3	-9.1
Ethnicity			
Caucasian	95.0	87.2	+7.8
Minority	5.0	12.8	-7.8
Education	n=161	N=26,258K ²	
Not a High School graduate	1.2	3.0	-1.8
High School graduate	9.0	17.0	-8.0
1-3 years college	16.0	19.0	-3.0
Bachelor's or higher degree	73.6	61.0	+12.6
Job Tenure			
less than one year	19.3	n.a.	--
1-5 years	43.5	n.a.	--
6-10 years	12.4	n.a.	--
greater than 10 years	24.2	n.a.	--

K: Numbers in thousands; n.a.: not available

¹ Waldrop, 1993² Ambry & Russell, 1992

While three persons gave no response for the ethnic/cultural background category, most of the respondents (95%, $n = 153$) reported themselves as Caucasian (white). Of the remainder, 1.2% ($n = 2$) were African-American, .6% ($n = 1$) were Asian/Pacific Islander, and 1.2% ($n = 2$) reported other ethnic backgrounds.

Most of the respondents (82%, $n = 131$) identified themselves with a standard management job title: supervisors, mid-level managers, upper-level managers, and executives (see Table 6). The remainder (18%, $n = 29$) reported other job titles, but also reported performing supervisory and management activities. These other job titles, such as "Professional Staff," "Sales Representative," "Service Provider," and "Independent Contractor" at first glance may seem inconsistent with a management identity. It may be noted, however, that an individual may have a more distinct and overarching identity other than "manager," such as information systems consultant, corporate attorney, or mechanical engineer. Since these individuals fulfilled management and supervisory responsibilities in addition to their specialty, then for this study they were classified as managers.

Table 6
Distribution of the Sample (N=160) by Job Title

Job Title	n	%
Supervisor	17	10.6
Mid-level manager	51	31.7
Upper-Level Manager	32	20.0
Executive	31	19.4
Professional Staff	18	11.2
Service Providers	4	2.5
Sales Representatives	4	2.5
Independent Contractors	3	1.9

Statistical Analyses of the Instruments with Study Sample

In order to assess the psychometric properties of the instruments used in this study, statistical analyses were performed for the Wellness Evaluation of Lifestyle-Revised, the Physical Self-Description Questionnaire, the Job Satisfaction Blank, and the Work Performance Scale. Although there were 161 managers who returned scorable packets of all instruments, only 155 of these 161 had complete data sets for all instruments. Specifically, six individuals did not complete the Work Performance Scale in its entirety. Where possible, the following analyses were performed on the 161 managers; where necessary, analyses were performed using the 155 complete data sets.

The Wellness Evaluation of Lifestyle-Revised (WEL-R)

Means and standard deviations for all WEL-R scales for the sample in this study are shown in Table 7 along with the statistics for the norm group upon which the WEL-R was established. The demographics of the norm group for the WEL-R were discussed in Chapter Three. The sample was similar to the norm group on all scales.

Alpha coefficients calculated for the sample group were markedly similar to the norm group (see Table 8). The "Intellectual Stimulation, Problem Solving, and Creativity" (ISPSC) scale proved to have a better internal reliability with the sample (.60) than the norm group (.51). In the initial reliability analysis, four scales had alpha coefficients that were lower than those obtained with the norm group: Realistic Beliefs (.50), Sense of Humor (.49), Gender Identity (.60), and Perceived Wellness (.44). In an effort to improve the internal reliability of these scales with the sample, an item-analysis was performed, and the less consistent items were omitted from each scale.

Table 7

Comparison of Means and Standard Deviations for WEL-R Scales between Norm Group
and the Sample of Managers

WEL Scales	Norm Group		Sample	
	N=344		n=161	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Spirituality	66.25	10.4	66.74	9.8
Self-Regulation, Total	274.97	27.3	276.01	23.7
Sense of Worth	16.67	2.3	16.69	1.8
Sense of Control	18.91	2.6	18.93	2.3
Realistic Beliefs	25.71	4.3	25.81	3.7
Emotional Responsiveness	23.12	3.3	22.88	3.1
Intellectual Stimulation	23.50	3.2	23.75	2.7
Sense of Humor	23.01	3.1	23.00	2.8
Nutrition	17.35	4.6	18.55	4.0
Exercise	14.85	3.4	15.04	3.3
Self-Care	32.05	5.1	33.30	4.0
Stress Management	18.56	2.9	18.64	2.7
Gender Identity	33.38	3.6	32.38	3.0
Cultural Identity	27.87	3.5	27.36	3.5
Work, Recreation, & Leisure	42.77	6.0	43.53	5.8
Friendship	52.70	6.1	51.63	5.7
Love	53.48	6.5	52.16	6.0
Perceived Wellness	11.91	1.9	11.84	1.8
Total Wellness	490.55	48.4	490.06	42.5

Three items were omitted from the Realistic Beliefs scale due to their low item-total correlations: "My perception of reality usually turns out to be like that of others" (.12); "I am not responsible for keeping other people happy" (.11); and "My expectations are usually met" (.19). The omission of these inconsistent items improved the internal reliability of the Realistic Beliefs scale to .52. Additional changes did not appear to improve the reliabilities further.

A negatively-worded item was omitted to improve the Sense of Humor scale: "Sometimes I use humor that embarrasses others." This item had a corrected item-total correlation of -.09. The alpha coefficient of the Sense of Humor scale improved to .65 with the omission of this item. Two items were omitted from the Gender Identity scale due to low item-total correlations: "My gender affects the quality of my life negatively" (.18), and "Being a male/female is a source of satisfaction and pride to me" (.19). The Gender Identity scale alpha coefficient improved to .64 with the omission of these items. The alpha coefficient for the Perceived Wellness scale improved to .51 with the omission of the item "Taking all things together, I would say that I am happy with the way things are for me these days." All other WEL-R scales obtained with this sample differed from the norm group by a marginal amount, i.e., $\pm .03$.

Table 8
Alpha Coefficients for Wellness Evaluation of Lifestyle (WEL-R): Norm Group and Sample

WEL-R Scales	Norm Group	Sample
	N = 333	N = 155
	Alpha Coeff.	Alpha Coeff.
Spirituality	.87	.87
Self-Regulation, Total	.83	.86
Sense of Worth	.67	.64
Sense of Control	.56	.50
Realistic Beliefs	.63	.52
Emotional Responsiveness	.65	.64
Intellectual Stimulation	.51	.60
Sense of Humor	.71	.65
Nutrition	.77	.75
Exercise	.77	.78
Self-Care	.56	.53
Stress Management	.60	.60
Gender Identity	.72	.64
Cultural Identity	.67	.70
Work, Recreation, & Leisure	.72	.74
Friendship	.80	.83
Love	.82	.82
Perceived Wellness	.50	.51
Total Wellness	.88	.86

Physical Self-Description Questionnaire

A factor analysis of the PSDQ item-scores indicated that each of the items assigned to its respective scale loaded highly on the appropriate factor, and loaded poorly on the other factors. These findings are presented in Table 9. Item-to-factor loadings for each scale ranged from .72 to .92 for the Physical Activity scale, from .55 to .81 for Strength, from .25 to .83 for Endurance, and from .22 to .92 for Health.

Two items proved to have higher loadings than is desirable for scales which they were not meant to measure. The second Endurance item (E2) stated "I would do well in a test of physical endurance and stamina." This item loaded .27 with Physical Activity, and .34 with Strength, and .40 with Endurance. The fifth item in Endurance (E5) stated "I can be physically active for a long period of time without being tired." This item loaded more highly with Physical Activity, .37; and Strength, .30 than it did with its own scale (.25). Such loadings indicate that the item did not measure independently the scale for which it was intended, but also measured overlapping physical self-concepts.

Factor correlations between scales were calculated to examine independence of each scale. These data are presented in Table 10. Very small negative correlations were found between the *Health* scale and the other three scales. Positive correlations were found among the other three scales.

An alpha coefficient was calculated for each PSDQ scale. The scales and their corresponding alphas were: Physical Activity, .96; Health, .81; Strength, .91; and Endurance, .93. These alpha coefficients are sufficiently high to give confidence in using the scales.

Table 9

Pattern Matrix of Item Loadings for Physical Self-Description Questionnaire Scales for Sample of Managers (N=161)

ITEM	PSDQ Scales			
	Physical Activity	Strength	Endurance	Health
PA1	.88	.04	.01	.01
PA2	.82	.01	.10	.10
PA3	.89	-.06	.09	-.04
PA4	.92	-.10	.09	.01
PA5	.73	.23	-.02	.03
PA6	.81	.13	-.08	-.03
S1	.01	.76	.11	-.04
S2	.09	.75	.09	.03
S3	.20	.75	-.05	.20
S4	.00	.55	.03	.00
S5	.13	.81	.08	.13
S6	-.09	.74	.06	-.09
E1	.08	.10	.83	-.03
E2	.27	.34	.40	.01
E3	.04	.08	.81	.04
E4	.04	.11	.82	-.01
E5	.37	.30	.25	-.07
E6	.33	.12	.45	.01
H1	.00	-.06	.05	.22
H2	-.12	.07	.00	.52
H3	-.01	-.10	.08	.84
H4	.12	-.03	.03	.58
H5	-.04	.05	.04	.92
H6	-.07	-.09	-.03	.59
H7	.06	.10	-.20	.57
H8	-.02	-.04	-.00	.56

PA = Physical Activity; S = Strength; E = Endurance; H = Health

Italics added for each scale to aid in comparing scale loadings to items within the scale.

Table 10

Correlations between PSDQ Factors for the Sample of Managers (n=161)

	Physical Activity	Health	Endurance	Strength
Physical Activity	1.00	--	--	--
Health	-.12	1.00	--	--
Endurance	.60	-.09	1.00	--
Strength	.59	-.30	.50	1.00

The Job Satisfaction Blank (JSB)

The possible range of scores for the JSB was 24, from four (lowest job satisfaction) to 28 (highest job satisfaction). The scores for this sample ranged from 11 to 26; the mean was 20.80, and the standard deviation was 3.36. Examination of the distribution of scores for evidence of a "normal" curve indicated the conditions were satisfied, with kurtosis of .556, and skewness of -.998 (Glass & Hopkins, 1984). Comparison between the sample and other populations of managers is presented in Table 11. As can be seen from this Table, the mean and range of scores on the JSB for this sample is most similar to other managers and most dissimilar to military personnel in all ranks through colonel and in various occupations. The distribution of scores on the JSB are in line with expectations for managers and executives (McNichols, Stahl, & Manley, 1978).

Table 11

Means and Standard Deviations for the Job Satisfaction Blank: Comparison of Sample (N=155) with Three Other Management and Personnel Samples[†]

Sample	n	<u>M</u>	<u>SD</u>	Range
current	155	20.85	3.36	11-26
1	360	21.25	2.73	10-27
2	17,110	19.31	4.07	4-28
3	10,996	17.69	4.98	4-28

1 = managers (foremen to senior managers) in a public utility company

2 = Department of Defense civil service employees in all grades and a variety of specialties

3 = military personnel in all ranks through colonel and in a variety of occupations

[†] Originally reported in McNichols, Stahl, & Manley, 1978.

Work Performance Scale (WPS)

The coefficients of reliability for item-scales of the WPS ranged from .51 to .74 (see Table 12). *Oral and Written Communication* had the lowest reliability coefficient (.51), while the highest reliability coefficients were obtained in the scales *Management and Administration* (.74) and *Maintaining Personal Discipline* (.70). Confidence in using the WPS as an aggregate of the eight items was determined from the coefficient alpha (.86) obtained when the scales were combined.

Correlation coefficients were computed to test the relationship of each item-scale to other item-scales of the WPS; they ranged from 0.38 to 0.76 (see Table 13). Such inter-scale correlations can indicate that the scales are fairly independent, yet related in that they measure similar elements of a global construct.

Table 12

Item-Total Coefficients of the WPS Item-Scales for the Sample (N=155)

Item-Scale	Reliability Coefficient
Application of Know-How	.63
Non-Specific Tasks	.67
Oral and Written Communication	.51
Demonstrating Effort	.61
Maintaining Personal Discipline	.70
Facilitating Peer and Team Performance	.53
Supervision	.60
Management and Administration	.74
Alpha Coefficient for All Scales	.86

Table 13

Correlation Coefficients for the WPS Scales for the Sample (N=155)

Factor	1	2	3	4	5	6	7	8
1. Know-How	1.00	--	--	--	--	--	--	--
2. Non-Specific Tasks	.64**	1.00	--	--	--	--	--	--
3. Oral/Written Comm.	.46**	.46**	1.00	--	--	--	--	--
4. Demonstrating. Effort	.60**	.58*	.44**	1.00	--	--	--	--
5. Personal Discipline	.56**	.63**	.49**	.76**	1.00	--	--	--
6. Facil. Peer/Team Per.	.43**	.50**	.38**	.47**	.51**	1.00	--	--
7. Supervision	.50**	.49**	.51**	.43**	.55**	.55**	1.00	--
8. Managem't & Admin.	.45**	.53**	.43**	.43**	.50**	.41**	.60**	1.00

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed)

A factor analysis was performed to determine the independence of item-scales of the WPS (see Table 14). A one-factor model (WPS) of the sum of the item-scales was proposed using oblique rotation, and loadings of each item-scale onto that one-factor model were calculated. The loadings indicated that all the item-scales, as a group, could be considered to represent the single factor of a global work performance score. The highest loadings were obtained with the scales Management and Administration (.78) and Maintaining Personal Discipline (.77). The lowest loadings on the one-factor solution were obtained for the scales Oral and Written Communication (.55) and Facilitating Peer and Team Performance (.58). The one-factor model provided good fit-to-data (chi-square = 74.54, $df = 20$, $p < .001$). The composite solution accounts for 46.4% of all the variation found in these eight item-scales.

Table 14

Factor Analysis of WPS Item-Scales with Global WPS as a One-Factor Solution for Sample (N=155)

Item-Scale (Factor)	Factor Loadings for WPS as a One-Factor Model
Application of Know-How	.68
Non-Specific Tasks	.73
Oral & Written Communication	.55
Demonstrating Effort	.68
Maintaining Personal Discipline	.77
Facilitating Peer & Team Performance.	.58
Supervision	.64
Management and Administration	.78

Multiple Regression Analyses

Multiple regression analyses were performed to determine the variance in each of the dependent variables that was explained by the independent variables. Sets of variables were entered into the equation in blocks to test specific hypotheses. This method was chosen because of the use of multiple measures which measure related constructs, and the desire to determine the change in variance that each block contributed.

Hypotheses One-a and One-b proposed that physical wellness would explain a significant proportion of the variance of work performance (WP). These Hypotheses were not supported by the findings. Physical wellness as measured by three subscales "Exercise," "Nutrition," and "Self-Care" of the WEL were entered as the first block of explanatory variables to test Hypothesis One-a. They did not explain a significant proportion of the variance of the dependent variable work performance ($R^2 = .05$, $F = 2.56$ (3,151), $p \leq .06$).

The four scales of the PSDQ, which represent additional measures of physical wellness, were entered in the second block as a test of Hypothesis One-b; they also did not explain a significant amount of the variance of WP ($R^2 = .06$, $F = 1.35$ (7,147), $p \leq .23$). The change in R^2 was also not significant ($\Delta R^2 = .01$, $F = .47$ (7,147), $p \leq .76$). These data, and the regression analysis for work performance, are shown in Table 15.

Hypothesis Two stated that occupational wellness would explain a proportion of the variance of work performance to a greater extent than physical wellness. This hypothesis was supported by the findings (see Table 15). Occupational wellness as measured by the subscale "Work, Recreation, and Leisure" (WRL) of the WEL did predict WP to a greater extent than physical wellness. The R-square for WRL in explaining WP was .12 ($F = 2.55$ (8,146), $p \leq .01$) and there was a significant change in the R-square (.06, $F = 10.37$ (8,146), $p \leq .001$).

Table 15

Summary of Setwise Multiple Regression Analysis for Predicting Work Performance in
Sample of Managers (n=155)

Variable	<u>B</u>	<u>SE B</u>	β	R^2	F	ΔR^2	F
Block 1				.05	2.57		
Self-Care	-.03	.23	-.01				
Exercise	.35	.32	.12				
Nutrition	.34	.26	.14				
Block 2				.06	1.35	.01	.76
Health	-.03	.15	-.02				
Strength	.23	.19	.15				
Endurance	-.09	.17	-.08				
Physical Activity	-.05	.15	-.05				
Block 3				.12**	2.55	.06**	10.37
Work, Recreation, & Leisure	.47	.15	.28**				
Block 4				.17	1.29	.05	.57
Spirituality	.02	.11	.02				
Sense of Worth	.01	.58	.01				
Sense of Control	-.39	.59	-.07				
Realistic Beliefs	-.02	.32	-.01				
Emotional Responsiveness	.22	.39	.07				
Intellectual Stimulation	.87	.43	.23*				
Sense of Humor	.10	.33	.03				
Stress Management	-.57	.48	-.16				
Gender Identity	.26	.50	.07				
Cultural Identity	-.04	.32	-.02				
Friendship	.05	.23	.03				
Love	-.19	.21	-.12				
Perceived Wellness	.24	.81	.03				

* $p \leq .05$

** $p \leq .01$

Hypothesis Three considered the combined contribution of physical wellness and occupational wellness. Prior research had indicated the relationship between physical fitness and work performance. Hypothesis Three, therefore, stated that physical wellness and occupational wellness, together, would explain a greater proportion of the variance of WP than either factor alone. The researcher believed that the combination of physical and occupational wellness would make a (large) significant contribution to the prediction of work performance. The tests of Hypothesis One-a and One-b proved, however, that the physical wellness variables did not contribute a significant proportion of the variance of WP. When all three sets had been entered into the equation, the sole contribution to the variance of WP was made by occupational wellness (12%); therefore, the findings did not support Hypothesis Three.

Hypothesis Four stated that components of wellness as measured by the WEL-R would predict work performance to a greater extent than physical and occupational wellness as measured by these subscales of the WEL. Although the R^2 increased to .17 when these components were added to the regression equation in a block, the change was not significant ($F = 1.29 (21,133)$, $p \leq .19$) (see Table 15). Additionally, of the remaining subscales entered into the equation, only Intellectual Stimulation, Problem-Solving and Creativity (ISPSC) provided a statistically unique contribution ($\beta = .23$, $t(21,133) = 2.00$, $p \leq .05$). When ISPSC and WRL were entered into a regression equation by themselves with WP as the dependent variable, the result was significant: $R^2 = .13$, $F = 10.87(2,152)$, $p \leq .01$. Of these two variables, WRL ($\beta = .23$, $t(2,152) = 2.74$, $p \leq .001$) made a greater contribution than ISPSC ($\beta = .18$, $t(2,152) = 2.13$, $p \leq .04$).

Hypotheses Five-a and Five-b proposed that physical wellness (blocks 1 and 2) would explain a significant amount of the variance of job satisfaction. The findings did not support these hypotheses (see Table 16). Physical wellness as measured by three subscales "Exercise", "Nutrition", and "Self-Care" of the WEL did not explain a significant

Table 16

Summary of Setwise Multiple Regression Analysis for Predicting Job Satisfaction in
Sample of Managers (n=155)

Variable	<u>B</u>	<u>SE B</u>	β	R^2	F	ΔR^2	F
Block 1				.02	1.24		
Self-Care	.13	.08	.15				
Exercise	.02	.11	.02				
Nutrition	-.01	.09	-.01				
Block 2				.03	.64	.01	.93
Health	-.01	.05	-.01				
Strength	.05	.07	.10				
Endurance	-.02	.06	-.05				
Physical Activity	-.02	.05	-.06				
Block 3				.35**	9.63	.32**	70.46
Work, Recreation, & Leisure	.36	.04	.62				
Block 4				.44**	4.97	.09	1.72
Spirituality	-.01	.03	.02				
Sense of Worth	-.35	.16	-.19*				
Sense of Control	-.24	.16	-.13				
Realistic Beliefs	-.07	.09	-.06				
Emotional Responsiveness	.20	.10	.18				
Intellectual Stimulation	.24	.12	.19*				
Sense of Humor	-.14	.09	-.10				
Stress Management	-.02	.14	-.02				
Gender Identity	-.23	.14	-.17				
Cultural Identity	.13	.09	.13				
Friendship	-.04	.07	-.06				
Love	-.01	.06	-.01				
Perceived Wellness	-.02	.23	-.01				

* $p < .05$ ** $p < .01$

amount of the variance of job satisfaction. The addition of the four PSDQ scales, which measure self-concept of physical wellness (Physical Activity, Strength, Endurance, and Health) also did not explain a significant proportion of the variance of job satisfaction. The change in R^2 was not significant.

Hypothesis Six proposed that occupational wellness would explain a greater proportion of the variance of job satisfaction than physical wellness. The findings clearly supported this hypothesis. Occupational wellness as measured by the subscale "Work, Recreation, and Leisure" (WRL) of the WEL predicted job satisfaction to a greater extent than physical wellness. The R^2 for all sets in the equation, including WRL, in predicting job satisfaction was .35 ($F = 9.63$ (8,151) $p \leq .001$). The change in R^2 was significant ($\Delta R^2 = .32$, $F = 70.46$ (8,151), $p \leq .001$; see Table 16).

Hypothesis Seven paralleled Hypothesis Three, which addressed the combined contribution of the physical wellness and occupational wellness variables to the variance of WP. Hypothesis Seven stated that physical wellness and occupational wellness, in combination, would explain a greater proportion of the variance of job satisfaction than either of these two factors alone. The findings did not support this hypothesis. Since the physical wellness variables did not contribute any significant proportion of the variance of job satisfaction as proven in tests of Hypotheses Five-a and Five-b, only the WRL variable contributed the significant proportion (36%) to the variance of job satisfaction (see Table 16).

The findings supported Hypothesis Eight. Variables of wellness as measured by the subscales of the WEL predicted job satisfaction to a greater extent than the combination of physical and occupational wellness ($R^2 = .44$, $F = 4.97$ (21,133), $p \leq .001$) (refer to Table 16). The change in R^2 was not significant ($\Delta R^2 = .09$, $F = 1.72$ (21,133), $p \leq .06$). In addition to the occupational wellness variable (WRL) in the regression equation,

two variables contributed statistically significant proportions to the variance of job satisfaction: ISPSC ($\beta = .19$, $t(21,138) = 2.01$, $p \leq .05$); and Sense of Worth (SW, $\beta = -.19$, $t(21,133) = -2.11$, $p \leq .04$).

In order to further understand the relationship of the significant beta weights of ISPSC and SW to the contribution of the variance of job satisfaction, a simple correlation analysis was performed. ISPSC correlated significantly with job satisfaction ($r = .31$, $p \leq .001$). SW did not correlate significantly with job satisfaction ($r = .09$, $p \leq .29$).

To gain further clarity on the negative beta weight associated with SW, a scatterplot was created after partialling out the unique contribution of SW to job satisfaction. The scatterplot indicated wide variance in SW scores, including several far-outliers, and a nearly horizontal (and perhaps slightly curvilinear) slope. The researcher determined that further analysis of SW as a predictor variable of job satisfaction was not warranted.

Interpretation of these findings will be made in the next chapter.

Summary of the Results

The results of the statistical analysis indicate that, in general, the following was supported: components of wellness other than physical wellness better predict job satisfaction and work performance in managers. Of particular note was the statistically significant proportion of variance to both dependent variables contributed by occupational wellness (WRL) and Intellectual Stimulation, Problem-Solving, and Creativity (ISPSC). Chapter Five will present a discussion of the results, implications for counseling and management, and recommendations for further research.

CHAPTER FIVE

DISCUSSION

The purpose of this study was to test the limited definition of wellness as used by business and industry by examining the contribution of physical fitness, health factors, occupational wellness, and other components of holistic wellness to an estimate of work performance and job satisfaction. Components of holistic wellness were included in the study because it was believed that a holistic wellness model would prove to have greater utility in predicting work performance and job satisfaction. Wellness models used by counselors offer support that components of wellness are important in predicting outcomes such as work performance and job satisfaction. Witmer and Sweeney's (1992) wellness model was selected for use in this study because it offers a rationale for physical and occupational factors as part of a comprehensive holistic wellness perspective. While other wellness models also suggest relationships between functional dimensions, the Witmer and Sweeney model has a theoretical basis in Adlerian psychology that proposes the relationship of wellness dimensions in terms of the accomplishment of individual life tasks within a geographical, historical, political, and social milieu.

The Witmer and Sweeney model, with its holistic orientation, differs in its definition of wellness from the simplified physical health and fitness model used by business and industry. Worksite wellness models conceptualize wellness using a simple path model where physical wellness affects health care costs directly and work performance indirectly. Past studies of corporate wellness programs have demonstrated health care cost reductions as a result of instituting physical fitness and health education (e.g., "wellness") programs. No study prior to this one has explored the relative contribution of physical wellness, occupational wellness, and other wellness factors (i.e., spirituality, friendship, love, and

components of self-regulation as mentioned in Chapter III) to the variance of job satisfaction or work performance.

Prior research indicated a relationship between physical wellness and work performance, and physical and mental health. The independent variables selected for this study, therefore, included physical fitness and health, occupational wellness, and several scales of holistic wellness, the latter of which are measured by the Wellness Evaluation of Lifestyle-Revised (WEL-R; Witmer, Sweeney, & Myers, 1995). Although the literature indicated that the primary rationale for initiating wellness programs in organizations would be the reduction of health care costs through the betterment of employee health, an increase in employee job satisfaction and work productivity have also been desired as secondary outcomes. Job satisfaction and work performance were thus selected as dependent variables. The results of the research will be examined more specifically after discussing the potential limitations of the study.

Limitations

In interpreting the results of this study, several limitations must be considered which limit the generalizability of the results. Several sources of selection bias must be considered. First, the sample was not randomly selected. The sample was drawn from managers scheduled to participate in training sessions at a behavioral science consulting firm specializing in leadership development. Second, the managers that participated in this study were volunteers. It is unknown whether these factors create actual error in generalizing to other managers.

A review of the demographic characteristics of the sample reveals several instances in which the managers who responded to the questionnaire differ from the national sample. For instance, this sample was better educated, with almost 13% more individuals than the national population with a four-year college degree or more advanced education. There were eleven percent more men than women, and almost eight percent more Caucasians in

this sample than in the national population. These differences limit the extent to which the results may be generalized to the national population of managers.

Discussion of Results

The general findings in this study indicate that a holistic wellness model explains work performance and job satisfaction in managers better than physical wellness alone. The physical wellness variables did not contribute to the variance of work performance and job satisfaction. Occupational wellness, as measured by the "Work, Recreation and Leisure" (WRL) scale of the WEL, contributed the greatest variance for both job satisfaction and work performance in this sample of managers. WRL, along with the wellness variable of "Intellectual Stimulation, Problem Solving and Creativity" (ISPSC), contributed 13% of the variance of work performance. These results suggest that the definition of a worksite wellness program based solely on physical wellness may be insufficient for enhancing work performance and job satisfaction. The results and implications will be discussed in more detail in the following sections.

Wellness Variables and Work Performance

The findings did not support the hypotheses (One-a and One-b) that physical wellness variables would predict work performance. Physical wellness variables did not contribute a significant proportion of the variance of work performance. This finding is not consistent with past research (see Donoghue, 1977; Pelletier, 1977; Rice, 1992).

A possible explanation for this discrepancy may be the methods used to assess work performance. Prior research (Chenoweth, 1983; Donoghue, 1977) has measured work performance using time-on-the-job as the criteria, employing the rationale that one cannot be performing work effectively when absent or tardy due to illness. In order to measure work performance in this study, the instructions to the WPS asked respondents to provide estimates of performance when on the job, not with an absolute sense which included absenteeism or tardiness. If methods such as absenteeism and tardiness due to illness had

been used to determine work performance, rather than the WPS employed in this study, then physical wellness may have predicted work performance. Additionally, physical wellness variables used in prior research have used physiological measures rather than the self-report measures employed in this study. The use of different measurement criteria and research methods may explain these results which contradict prior research.

Occupational wellness significantly predicted work performance. Performance at work follows the degree to which a manager thinks, behaves and feels in a way that supports occupational wellness. Occupational wellness was operationalized through the WRL scale of the WEL as a) using one's skills appropriately; b) lack of role conflict; c) having adequate financial security; d) perceiving that one's workload is manageable; e) participating in decision-making at work; f) feeling appreciated for one's work; g) being satisfied with activities in work and play; h) having a playful attitude toward life tasks; i) the ability to cope with stress in the workplace; j) valuing work and leisure; and k) having a balance between work and leisure. Occupational wellness, therefore, can be considered to reflect attributions about the self experienced at work and in leisure activities in terms of abilities, opportunities, and values.

Hypothesis Three extended the first two hypotheses by suggesting that the unique contributions of physical wellness and occupational wellness, when added together, would predict a greater proportion of the variance of work performance than either variable alone. Since prior research had suggested a connection between physical wellness and work performance, it was expected that physical wellness would contribute a proportion of the variance, and that occupational wellness would predict a greater amount of the variance of work performance. This hypothesis was not supported. Only the occupational wellness variable made a significant contribution, explaining 12% of the variance. The physical wellness variables did not contribute any significant proportion to the variance.

All other wellness variables added little to the prediction of work performance, as proposed in Hypothesis Four. The resulting amount contributed by the remaining components of wellness was not significant. Only intellectual Stimulation, Problem-Solving, and Creativity (ISPSC) evidenced a significant contribution to WPS as indicated by its beta weight. ISPSC pertains to being open-minded, curious and mentally active, and engaging in cognitive flexibility when problem solving or resolving social conflicts. As could be expected, ISPSC contributed to the prediction of work performance in a sample of managers. Managers must frequently solve complex and complicated problems, and the ability to gain perspective and flexibly solve a variety of technical, strategic, and social conflict problems could be considered to be an essential job requirement.

WRL predicted work performance better than ISPSC, although when combined they contributed 13% of the variance of work performance. The capacity to apply creative problem-solving approaches that demand open-mindedness and flexible perspective-taking may be a requirement in the marketplace. This finding supports Senge's (1990) conclusion that management training in creative problem-solving and flexible perspective-taking, as well as maintaining an openness to new ideas, would be beneficial to promote management success and keep organizations competitive.

Wellness Variables and Job Satisfaction

As in the prediction of work performance, it was expected that the physical wellness variables would make a significant contribution to the variance of job satisfaction. Prior research suggested that a connection could be expected between physical wellness and mood, self-esteem, and work behavior (Doan & Schermen, 1987; Folkins & Sime, 1981). Job satisfaction could be considered to be an indication of mood and self-concept, which would be influenced by physical wellness. The results, however, did not support the expected contribution of physical wellness variables to the variance of job satisfaction, as proposed in Hypotheses Five-a and Five-b.

Occupational wellness explained a greater proportion of the variance of job satisfaction than physical wellness variables, as proposed in Hypothesis Six. Physical wellness variables were expected to be less clear predictors of job satisfaction than occupational wellness. Hypothesis Seven proposed that the combination of physical and occupational wellness would explain a greater proportion of the variance of job satisfaction than either physical wellness or occupational wellness alone. Physical wellness did not contribute a significant proportion to the variance of job satisfaction. Occupational wellness alone explained 35% of the variance of job satisfaction.

The component of wellness that provided support for Hypothesis Eight by predicting job satisfaction was ISPSC. ISPSC had a positive, significant beta weight in the regression equation, and a significant correlation with job satisfaction. From these results, an interpretation would be that an individual who uses his or her intellectual capabilities in creative ways has higher job satisfaction than one who is less likely to address intellectual challenges by employing creative thinking.

The positive weighting of ISPSC in its contribution to the variance of job satisfaction parallels the results relating ISPSC and work performance. The complexity of managerial work requires managers to make many decisions in the absence of complete information. Those persons who are more open-minded and not driven to find the "one right answer," and who more readily use a flexible and creative problem-solving process in the face of complexity would be expected to present higher job satisfaction scores. Those less adept in the skills of ISPSC could be expected to be frustrated or disappointed with their work and thus have lower job satisfaction scores. Argyris (1985) and Senge (1990), promote the development of "systems thinking," the ability to step outside the box and find the root cause of behavior and processes as antidotes to poor management performance and morale. The results support such arguments.

Sense of Worth (SW) contributed a negative beta weight in the regression equation with job satisfaction as the dependent variable. A literal interpretation of this finding suggests that those individuals with low sense of worth have high job satisfaction. This interpretation is counter-intuitive, contrary to prior research, and inconsistent with the wellness model on which this study was based. It is likely that measurement anomalies created this confusing picture.

In order to make sense of this picture, it may be noted that the correlation between SW and job satisfaction for this sample was .09. This low correlation is reflected in the scatterplot of the SW scores in relation to job satisfaction, which could be interpreted as horizontal or slightly curvilinear. A curvilinear distribution would indicate not only that those individuals with high SW have high job satisfaction, but those individuals with low SW have high job satisfaction as well, as indicated by the negative beta weight in the regression equation. In light of past research linking high SW with high job satisfaction, a curvilinear interpretation is further confusing.

This conundrum may perhaps best be explained through analysis of the items employed to measure SW. For instance, four items in the WEL-R were supposed to measure the SW concept. Four items may have been insufficient to adequately capture the desired construct of Sense of Worth. With this sample, two of the four items had respective corrected item-total correlations of .33 and .39, indicating that these items may not have reliably measured the SW concept. The other two items had respective item-total correlations of .46 and .54. If two out of the four items used in the SW scale had low item-total reliability coefficients, then this would create measurement anomalies for the scale as a whole. Further research would provide more data to lend clarity in interpreting the negative beta weight of SW.

Implications for Management

The results of this study suggest that the current physical fitness and health model of wellness used by business and industry is insufficient in promoting work performance and job satisfaction. The relationship between occupational wellness and work performance and job satisfaction seems particularly relevant for even the most results-oriented executives. Further, the importance of Intellectual Stimulation, Problem-Solving and Creativity in predicting both of the dependent variables clearly argues for training in intellectual flexibility and creative problem-solving.

The development of occupational wellness to improve performance is consistent with Senge's (1990, 1991) arguments for the development of whole persons in order to make organizations more competitive. Manager's contributions can be considered to be more than just the immediate impact of the work that they perform. The potential of the manager to develop abilities and contribute at points in the future must also be considered. Occupational wellness explains 12% of the variance of work performance, and that 12% may explain what managers can do to increase their potential to contribute to organizations and further their own career success.

The development of occupational wellness as a function of organizational training and development programs is consistent with Conger's (1993) assertion that individuals bring their needs for community involvement and spiritual meaning to the workplace. While the bottom-line of organizations is to survive financially, occupational wellness can be considered as a means to the bottom line. Not only is it related to work performance, but it also explains a significant proportion of the variance of job satisfaction. The development of components of occupational wellness (such as stress management) are common targets of organizational development programs. However, the development of components of occupational wellness are usually not part of a systematic program of culture change which will support ongoing occupational wellness, and it may be the

exception rather than the rule that corporations actually aim to develop occupational wellness (French & Bell, 1995).

A systematic approach to the development of occupational wellness and creative problem-solving would further enhance the human system in an organization that had experienced restructuring or business process reengineering. Often restructuring brings about emotional trauma to the survivors such that they are risk-averse and less prone to act creatively (Noer, 1993). Organizational reengineering, which generally does not produce such extreme grieving as the downsized organization (Bridges, 1988), nonetheless causes difficulties in adjustment of individuals to the new business paradigm. Programs aimed at creating and sustaining occupational wellness and intellectual creativity (including risk-taking in problem-solving) would seem to be an appropriate function for organization development that would result in improved productivity and morale.

A systematic organizational development wellness program based upon results of this study would include, in addition to physical wellness programming, specific training in dimensions of occupational wellness and intellectual flexibility and creativity. Such a program would involve an initial assessment of holistic wellness using an instrument such as the WEL. Psycho-educational training modules would be followed up by both individual and group counseling and coaching to sustain the changes made by participants. O'Donnel and Ainsworth (1984) argue that the only sustainable program is one that involves the whole organization and is modeled and driven by the organization's leaders.

Implications for Counseling Practice

The results of this study suggest that managers' work performance capabilities and job satisfaction may be developed by improving holistic wellness factors. The evidence of this study seems to justify broadening wellness programs among organizational management to a more integrated and holistic orientation. Counselors are uniquely equipped to provide such wellness programs. Counselors' background in human

development allows them to understand and enhance individual functioning from a wellness paradigm. Further, counselors have the professional training to counsel and consult on an individual and group basis to promote wellness throughout its multiple dimensions.

Within the scope of an integrated wellness program, counselors can use the framework of occupational wellness to direct interventions for career development and career transition issues. Many of the individual items that measure occupational wellness in this study can be considered targets for career counseling issues, such as appropriate use of skills, lack of role conflict, adequate financial security, having a manageable workload, and maintaining a balance between work and leisure. Individuals considering a career transition or simply desiring to enhance their occupational wellness to improve job satisfaction may be advised of the occupational wellness variables which explain job satisfaction.

Many dual-career couples are faced with decisions pitting some variables of occupational wellness against others. For instance, the desire to build financial security by having both partners work may conflict with desires to have a manageable workload on the job and at home and lack of role conflict between provider and parent roles (Thompson & Blau, 1993). Particularly for managers, who often work long hours to fulfill their responsibilities, the difficulty of balancing work and leisure may be keen. The occupational wellness framework may suggest a broadened area of inquiry and practice for scientist-practitioners working with managers who are partners in dual-career relationships.

Counselors working with managers who are striving to improve their career opportunities may benefit from examining the relationship of ISPSC to work performance and job satisfaction. The development of perceptual flexibility and mental agility for solving problems may allow these managers to excel within their organizations. Those managers who are at risk for termination due to poor performance may need coaching in order to facilitate innovative problem-solving approaches to their situations for they may be

"stuck" in a cognitive-perceptual rut that prevents them from seeing root causes for problems and alternate solution strategies. Counseling often facilitates the development of cognitive functioning (Ivey & Goncalves, 1988) and flexibility in perceptions (Mahoney, 1991).

The wellness model also suggests other interventions that can facilitate the functioning of managers. Stress management may be a critical issue for those managers who are constantly pressured to perform, yet their performance falls off with the addition of more responsibility. The development of realistic beliefs may be the preferred intervention for managers who overwhelm themselves with responsibilities at work, home, and in the community. Emotional responsiveness (and the management of emotions) play a key role for managers to develop and sustain the kinds of peer and subordinate relationships necessary for achieving organizational goals (Goleman, 1995). Many managers are so focused on the content of their work that they overlook the essential emotional nature of work, and the human system in their organizations end up sub-optimizing. Counseling interventions directed at emotional responsiveness and emotional management may make the difference between success and failure for many managers, especially the more responsible they are for getting others to perform instrumental work functions.

Counselors currently working with individuals in organizational settings or EAPs may find it useful to assess wellness using a holistic wellness device such as the WEL. The results of such assessments may point toward interventions which will help individuals develop occupational wellness as a means of achieving job satisfaction. Further, such assessments, when combined with other clinical appraisal techniques, may indicate the need for cognitive interventions to enhance intellectual flexibility.

Implications for Counselor Education and Training

Health educators and industrial nurses often provide the physical and health aspects of wellness, but the role of counselors has not been as closely associated with wellness within business and industrial settings. The narrow definition of wellness used in business environments may play a part in this absence of perception of counselors as wellness program providers. As the results of this study indicate, a broadened definition of wellness which includes other elements than physical and health dimensions has utility for predicting variables of interest to business and industrial settings. Two obstacles currently exist which would limit counselors access to the potentially large client base in business settings: credibility and training.

The best credibility for any individual provider or group of providers for management or business development programs is evidence of successful results. Executive decision makers want to see evidence of the utility of any intervention program on which money will be spent. Research such as this, which indicated the utility of broadening the definition of wellness, provides general support for wellness interventions. Entrepreneurial counselors who are able to get their foot in the door through charismatic relationships or other means to establish pilot holistic wellness programs could use outcome studies to further establish credibility with executive decision makers.

Specialized certification indicating exposure to a body of knowledge pertinent to success in a field is another means of establishing credibility. The credentialing of counselors to signify specific training for work with adults in business and industrial settings could address this issue, thus fulfilling the needs of a potentially large client base. Although specialty credentialing in the counseling profession is a controversial issue with compelling arguments for and against, this issue may need to be examined as a means to open doors to a large client base and as a means to demonstrate value for executive decision makers.

Counseling programs may need to be accredited to train counselors for work in business and industry settings. Accreditation of a counseling program indicates that the academic preparation of graduates meets minimal standard criteria. The Council for the Accreditation of Counseling and Related Educational Programs (CACREP, 1994) has established training standards for counseling specialties, including school counseling, college student development, community agency counseling, career counseling, mental health counseling, gerontological counseling, and marriage and family therapy. Decision-makers in the counseling profession may decide that the specific training of counselors for work in business and industry settings is appropriate to meet the needs of society. If so, then CACREP could set academic preparation standards for counseling programs desiring to prepare students for work in industry settings. Graduates of such an accredited program who have been exposed to a standard curriculum in management and organizational development issues may have greater credibility with executive decision-makers seeking professionals to administer wellness programming within their companies.

Another means to establish credibility of counselors as wellness providers is to infuse the wellness paradigm into core curricula of counselor education programs as established by CACREP. Many, if not all, counseling courses could be taught through the framework of the wellness paradigm. Such infusion would establish an even broader base of wellness program and counseling providers than a specialty training and certification model. Both the specialty training and certification of management and organizational development counselors model and the infusion model for training all counselors may impact the potential market.

Recommendations for Future Research

The results of this study suggest that a broadened definition of wellness has utility for explaining variables of interest for business and industry. Additional research may help to understand wellness theory and intervention issues in relation to management issues

and organizational environments. Future research would provide a better understanding of both the population of managers and the independent variables. First, a larger sample which included more women and minorities would allow more accurate representation of the population of managers.

Second, the definition of "manager" could be more clearly delimited. For this study, the managers in the sample included a range of CEO's, Presidents and Executive Vice-Presidents, middle managers, and front-line supervisors. Each of these groups could be studied separately in order to determine what, if any, wellness dimensions discriminate the groups.

Third, additional measures of the independent and dependent variables would reduce measurement error. For instance, physiological measures of physical wellness could be collected. Multiple measures would reduce error introduced by testing and allow further discrimination of the variables of interest; thus, the findings could be further verified.

Fourth, an experimental holistic wellness program staffed by counselors could be designed and implemented that included education, training, counseling, and coaching. Outcome research with a control group of non-participants could reveal the utility of the holistic wellness approach in developing wellness behaviors in managers. Further, significant variables in the development of wellness at the worksite could be explored, such as the relationship between social behaviors and wellness, and the impact of organizational climate and culture on occupational wellness.

Occupational wellness proved to be significant in predicting the dependent variables. The current study provides evidence of the value of more research into occupational wellness as a construct and its influence in multiple life roles. In particular, the concept of occupational wellness could be extended through examining what conditions promote or hinder its development, including such variables as age, gender, ethnicity, education, personality factors, and environmental conditions (such as management philosophy).

This study indicates that those managers that have the perceptual flexibility to approach problems creatively (higher ISPSC scores) also are more satisfied with their jobs and have higher work performance. How these managers developed these intellectual, emotional, and behavioral skills, and how these skills can be enhanced has not been examined. Future research could explore how to assist individuals who are not so intellectually flexible or creative to develop those abilities which lead to heightened productivity. Differences between these managers or similar individuals in regards to creativity, emotionality, and social problem-solving would further extend this research.

More research is needed to understand the findings in this study of the negative beta weight of Sense of Worth predicting job satisfaction. Additional measures of sense of worth may be helpful to study this perplexing finding. If indeed there are individuals for whom low sense of worth is associated with high job satisfaction, then the genesis of this scenario would be an intriguing contribution to the literature.

The relationship between individual wellness, work performance and job satisfaction, and working environment was not addressed in this study. Conyne (1985), in promoting the concept of the counseling ecologist, suggested that individuals cannot be evaluated effectively without also considering the environment or situational context of their behavior. Argyris (1985) also argues convincingly of the effects of organizational culture or climate in determining work behavior such as management decisions. Taking this position to its logical end, context (or environment) may be as important as personality dimensions in determining behavior. Extensions of the current study would thus include examining individual wellness and (1) the contextual/environmental conditions that promote or hinder intellectual and behavioral flexibility, and (2) emotional conditions that limit or foster mental agility in work, education, and home settings. The social ecology which fosters or hinders individual wellness would still fit within the Witmer and Sweeney (1992)

wellness model, yet would suggest a broadened source for interventions than typically conceptualized by counselors or managers.

Concluding Remarks

It was the purpose of this study to test the limited definition of wellness used by business and industry (which focuses on physical fitness and health) and to examine the contribution of holistic wellness variables to work performance and job satisfaction. Wellness variables predicted work performance and job satisfaction significantly better than physical wellness variables alone, lending credibility to the argument that a holistic wellness model such as Witmer and Sweeney's (1993) has utility for the design and implementation of worksite wellness programs. Future research into the specific management groups and using multiple measures will further illuminate the contribution of the wellness variables to work performance and job satisfaction. An interesting next step may be for counselors to initiate a pilot holistic wellness program in a business setting and evaluate it thoroughly.

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APPENDIX A
Permission to Obtain Clients

James N. Farr, Ph.D.
Farr Associates, Inc.
4524 W. Wendover Ave.
Greensboro, NC 27410

20 March, 1995

Dear Gerald A. Hutchinson Jr.

After having reviewed your doctoral research proposal and considered its merit, I agree to provide you access to clients and participants of Farr Associates. I understand that your data collection period will begin in early April and last long enough to get the sample size that you need (about 150 subjects).

I also understand that the research project is being supervised by Dr. Jane Myers at the University of North Carolina at Greensboro, and that participation in the research is voluntary.

Sincerely,

[COPY]

James N. Farr

APPENDIX B

Introduction of Research to Respondent

More tests?

Yes, but they are short. And you get an extra bonus for your participation.

We at Farr are always expanding our understanding of optimal performance. This research is just another way we ensure that the courses you take at Farr are "cutting edge." In this case we are looking at the relationship between wellness, work performance, and job satisfaction. The better we understand the factors contributing to your success, the better we can serve you.

Please take an extra thirty minutes to complete these short tests and return them to us in the envelope provided. In appreciation of your response we will send you a graphic chart plotting your wellness scores, an executive summary of our findings, and a wellness workbook.

Inside you'll find four short questionnaires, and a consent form.

P.S. If you have any questions, please call Gerald Hutchinson at (910) 294-5976.

APPENDIX C

THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

FROM: Gerald A. Hutchinson Jr.
Principal Researcher and Doctoral Candidate,
University of North Carolina at Greensboro
Farr Associates Consultant
TO: (NAME)
RE: Informed Consent to Participate in Research

Thank you for considering participating in this research project. Please read this carefully before proceeding.

Purpose: This research project focuses on the relationship between wellness, work performance and job satisfaction. For this project, wellness is defined as multi-dimensional lifestyle that includes physical, social and psychological functioning, among other aspects. This research fulfills requirements for my Ph.D. dissertation. You have been selected to participate due to your attendance at a Farr Associates, Inc. training activity.

Procedure: The procedure is simple: Complete the four questionnaires and the information sheet included in this packet. This will take about 30-40 minutes. Then mail the materials back in the stamped, self-addressed envelope provided.

Benefits: For your participation in this project, you will receive scores on your multi-dimensional wellness, along with a wellness workbook. Additionally, you will receive an executive summary of the research findings at your request.

Risks: I am required to inform you that participation in this research may present some discomfort or risk. Examining yourself and your behaviors may make you uncomfortable, or present the risk that you will seek to change yourself or your situation resulting in unpredictable and/or undesirable consequences.

Participation: Your participation in this research is completely voluntary, and you may withdraw at any time without penalty or prejudice. Any information that you provide will be held in confidence by the researcher and his associates following the ethical code of the American Counseling Association. You will not be identified by name as a participant in this project.

Questions: This project and its consent form have been approved by the University Institutional Research Board which ensures that research projects involving people follow federal regulations. If you have any questions about this, you may call Beverly-Maddox Britt in the Office of Research Services at (910) 334-5878. If you have any questions about the research project itself, you may call Gerald Hutchinson at (910) 294-5976, or Dr. Jane Myers at (910) 334-5000.

Compensation/Treatment for Injuries: As a volunteer in this research, you will receive no compensation for participation. Your consent further depends on your understanding that there will be no treatment provided for any injuries sustained or incurred in the course of this research project.

New Information: You will be provided any new information that develops during the project that might affect your willingness to continue participation.

Evidence of Consent: Completion of the research materials and returning them to Gerald Hutchinson at Farr Associates is evidence of consent to participate.

WELLNESS EVALUATION OF LIFESTYLE (WEL Inventory)

A Guide to Assessing Personal Resources for Wellness and Developing a Plan for Living Life More Fully

INTRODUCTION

The Wellness Evaluation of Lifestyle is based on a lifespan, holistic model of wellness and prevention developed by Drs. J. Melvin Witmer and Thomas J. Sweeney at Ohio University. This model was conceptualized in large part from empirical studies across disciplines. We define wellness as a way of life oriented toward optimal health and well-being in which body, mind, and spirit are integrated by the individual to live life more fully.

INSTRUCTIONS

The items in the wellness inventory are statements which are intended to describe you. As you read each statement, answer in a way that describes how you generally see yourself, the way you feel, or the way that you usually behave. Your honest answers will help you to develop a personal wellness profile and a prescription for healthy living over the lifespan.

The response choices for each item are *Strongly Agree*, *Agree*, *Undecided*, *Disagree*, and *Strongly Disagree*. Darken the bubble box to the right of the item which most closely reflects the accuracy of the statement for you. For example, if you *Disagree* with the following statement, blacken the bubble box under *Disagree* as shown here:

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
I like meeting new people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

It is important that you answer all the questions, but do not spend too much time on any one item.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. I get regular dental check-ups (i.e., once or twice a year.)					
2. I am comfortable interacting with individuals who are culturally different from myself.					
3. I most always wear my seat belt when riding in a car.					
4. I frequently see humor even when engaged in a serious task.					
5. I avoid the use of illegal drugs.					
6. I have learned how to change my thinking in order to manage stressful situations in my life.					
7. I avoid the use of alcohol or limit my consumption to no more than two drinks per day.					
8. Among my family or closest friends, communications are frequent, open and straightforward whether about trivial or important matters.					
9. I have little interest in the needs of others.					
10. I have come to be at peace with my eventual death.					
11. I have friends who would do most anything for me if I were in need.					
12. I am able to express appropriately both my positive and negative feelings.					
13. I am satisfied with the balance between my work and my leisure.					
14. I do not use tobacco.					
15. My cultural heritage enhances the quality of my life.					
16. The work I do allows me to make use of my abilities and skills.					
17. I have had a mystical or peak experience in which I felt a sense of inner peace and timelessness.					
18. I engage in a leisure-time activity in which I lose myself and feel like time stands still.					
19. I have a genuine concern for the nurturance and growth of others.					
20. I prefer not to be in the presence of others who are spiritually, racially, or culturally different from myself.					
21. I am able to laugh at myself.					
22. I am often misunderstood by others.					
23. My gender affects the quality of my life negatively.					
24. When the going gets tough, my family or friends pull together to meet the challenge.					
25. I intentionally seek uplifting experiences on a daily basis.					
26. I look forward to the work I do each day.					
27. I speak up in order to make my needs known to others.					
28. When I need information, I have friends whom I can ask for help.					
29. If I had a physical or emotional condition that warranted professional consultation, I would seek such assistance.					
30. I eat three meals a day including breakfast.					
31. I strive to enhance my health and wellness.					

Do not mark outside this line

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
12. I am often disappointed because my expectations are not met.					
13. My finances are adequate to support my current lifestyle.					
14. I have had my share of happiness in my life up to now.					
15. I am sometimes uncertain about what is expected of me when I work.					
16. I am able to find creative solutions to difficult problems.					
17. I have friends and/or relatives who would provide help for me if I were in need.					
18. Members of my family or closest friends show appreciation to one another on a daily basis without any reason being necessary.					
19. In my non-work time, I regularly do things that are of service to others outside my family.					
20. I accept my physical appearance in spite of my imperfections.					
21. I participate in organized religious or spiritual practices.					
22. I am usually aware of how I feel about things.					
23. I keep my weight within an acceptable range (15% of my ideal body weight) for a person my height, age, gender, and frame.					
24. I am usually able to pace myself so that I do not get overly stressed because of lack of energy or time.					
25. I make assumptions or jump to conclusions which affect me negatively, and which turn out to be untrue.					
26. I get regular medical check-ups.					
27. My values provide adequate guidance for solving problems and making choices in my daily life.					
28. I am satisfied with my spiritual well-being.					
29. I am able to express my feelings spontaneously.					
30. I view change as an opportunity for growth and improvement.					
31. I usually have plenty of energy.					
32. I daily seek a good laugh through means such as the comic strips and television programs.					
33. I am able to experience a full range of human emotions, both positive and negative.					
34. I believe that I am a worthwhile person.					
35. I am satisfied with my sexual life.					
36. Managing my anger is not a problem for me.					
37. It is important for me to be liked or loved by almost everyone I meet.					
38. I have at least one person in my life with whom I have a significant positive emotional relationship.					
39. Overall, I am satisfied with my ability to cope with life.					
40. I feel that I am genuine in my relationships with others, that I am "real," and that I can be "me."					

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
91. I tend to trust others until I have reason to do otherwise.					
92. I am comfortable being nurturing, loving, and supportive.					
93. I have little control over conditions affecting the work I do.					
94. I think there is a good reason to get up every morning.					
95. My spiritual growth is an essential lifelong journey.					
96. I am a lonely person.					
97. I am comfortable with the social skills I have for interacting with others.					
98. I experience a sense of awe and wonder with each new day.					
99. I am able to understand the feelings of others without being judgemental.					
100. I do some form of stretching activity at least three times per week.					
101. I am able to approach tasks from a playful point of view.					
102. I participate in physical activity through work or leisure at least three times a week for at least 20 minutes each day.					
103. I have at least one intimate relationship that is secure and lasting.					
104. I strive to meet my purpose and goals in life through planfulness.					
105. I have at least one person in whom I can confide my thoughts and feelings.					
106. Things seldom work out the way that I want them to.					
107. I seek ways to stimulate my thinking and increase my learning.					
108. I usually achieve the goals I set for myself.					
109. Prayer, meditation, or individual spiritual study is a regular part of my life.					
110. Even though we spend a great deal of time together each week, my family or closest friends never tire of one another's company.					
111. When seeking solutions, I gather information, study the choices, and evaluate the possible outcomes before taking action.					
112. I have at least one person with whom I can "be myself" in bad moments as well as good.					
113. I sometimes use humor that embarrasses others.					
114. Taking all things together, I would say that I am happy with the way things are for me these days.					
115. My cultural identity is a source of satisfaction and pride to me.					
116. Being a male/female is a source of satisfaction and pride to me.					
117. I am not responsible for keeping other people happy.					
118. I have sources of support with respect to my race, color, or culture.					
119. Generally I feel support from others with respect to my gender.					
120. I eat a variety of foods including fresh fruits, vegetables, and whole grains daily.					
121. I value and enjoy relationships with persons of different color, race, and culture.					

Do not mark outside this line

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
122. I value and enjoy positive relationships with persons of both genders.					
123. My diet includes an adequate amount of vitamins, minerals, and fiber.					
124. Even when I am a minority because of my color, race, or culture, I feel able to cope well with most situations.					
125. I have learned to solve most life situations without feeling limited because of my gender.					
126. When things don't go right, I accept my "failings" rather than put myself down.					
127. Others describe me as having a good sense of humor.					
128. I am interested in the needs of others.					
129. I am seldom lonely.					
130. My expectations usually are met.					
131. It is important to me to be physically fit.					

APPENDIX E

Job Satisfaction Blank

Choose **one** of the following statements which best tells how well you like your job.
Place a check (✓) in front of that statement:

- _____ I hate it.
- _____ I dislike it.
- _____ I don't like it.
- _____ I am indifferent to it.
- _____ I like it.
- _____ I am enthusiastic about it.
- _____ I love it.

Check **one** of the following to show how much of the time you feel satisfied with your job:

- _____ All of the time.
- _____ Most of the time.
- _____ A good deal of the time.
- _____ About half the time.
- _____ Occasionally.
- _____ Seldom.
- _____ Never.

Check **one** of the following which best tells how you feel about changing your job:

- _____ I would quit this job at once if I could get anything else to do.
- _____ I would take almost any other job in which I could earn as much as I am earning now.
- _____ I would like to change both my job and my occupation.
- _____ I would like to exchange my present job for another job in the same line of work.
- _____ I am not eager to change my job, but I would do so if I could get a better job.
- _____ I cannot think of any jobs for which I would exchange mine.
- _____ I would not exchange my job for any other.

Check **one** of the following to show how you think you compare with other people:

- _____ No one likes his/her job better than I like mine.
- _____ I like my job much better than most people like theirs.
- _____ I like my job better than most people like theirs.
- _____ I like my job about as well as most people like theirs.
- _____ I dislike my job more than most people dislike theirs.
- _____ I dislike my job much more than most people dislike theirs.
- _____ No one dislikes his/her job more than I dislike mine.

Adapted from: Hoppock, R. (1977). Job satisfaction. New York: Arno Press.

APPENDIX F

Physical Self-Description Questionnaire

This is a chance to look at yourself. THIS IS NOT A TEST. There are no right answers and everyone will have different answers. Be sure that your answers show how you feel about yourself. Answer each sentence quickly as you feel now. Please do not leave any sentence blank.

There are six possible answers for each question—"True", "False", and four answers in between. There are six numbers next to each sentence, one for each of the answers. The answers are written at the top of the numbers. Choose your answer to a sentence and put a circle around the number under the answer you choose. An example is below.

- | | False
1 | Mostly
False
2 | More
False
Than
True
3 | More
True
Than
False
4 | Mostly
True
5 | True
6 |
|------------------------------------|------------|----------------------|------------------------------------|------------------------------------|---------------------|-----------|
| 1. In general, I am neat and tidy. | | | | ④ | | |

(I put a circle around the number 4 under the answer "More True Than False" because I am somewhat neat, but I am sometimes messy.)

If you want to change an answer you have marked you should cross out the circle and put a new circle around another number on the same line. For all sentences be sure that your circle is on the same line as the sentence you are answering. You should have only one answer for each line. Do not leave out any sentences, even if you are not sure which number to circle.

- | | False
1 | Mostly
False
2 | More
False
Than
True
3 | More
True
Than
False
4 | Mostly
True
5 | True
6 |
|---|------------|----------------------|------------------------------------|------------------------------------|---------------------|-----------|
| 1. When I get sick I feel so bad that I cannot get out of bed. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Several times a week I exercise or play hard enough to breathe hard. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. I am a physically strong person. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. I can run a long way without stopping. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. I usually catch whatever illness (flu, cold, virus, etc.,) that is going around. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I often do exercise or activities that make me breathe hard. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. I have a lot of power in my body. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. I would do well in a test of physical endurance and stamina. | 1 | 2 | 3 | 4 | 5 | 6 |

	False	Mostly False	More False Than True	More True Than False	Mostly True	True
9. I am sick so often that I cannot do all the things that I want to do.	1	2	3	4	5	6
10. I get exercise or activity 3 or 4 times a week that makes me huff and puff and lasts at least 30 minutes.	1	2	3	4	5	6
11. I am stronger than most people my age.	1	2	3	4	5	6
12. I could jog 4 miles without stopping.	1	2	3	4	5	6
13. I hardly ever get sick or ill.	1	2	3	4	5	6
14. I do physically active things (like jogging, dancing, bicycling, aerobics, gym, or swimming) at least 3 times a week.	1	2	3	4	5	6
15. I am weak and have no muscles.	1	2	3	4	5	6
16. I think I could run a long way without getting tired.	1	2	3	4	5	6
17. I get sick a lot.	1	2	3	4	5	6
18. I do lots of sports, dance, gym, or other physical activities.	1	2	3	4	5	6
19. I would do well in a test of strength.	1	2	3	4	5	6
20. I can be physically active for a long period of time without getting tired.	1	2	3	4	5	6
21. When I get sick it takes me a long time to get better.	1	2	3	4	5	6
22. I do sports, exercise, dance, or other physical activities almost every day.	1	2	3	4	5	6
23. I am good at lifting heavy objects.	1	2	3	4	5	6
24. I am good at endurance activities like distance running, aerobics, bicycling, swimming, or cross-country skiing.	1	2	3	4	5	6
25. I have to go to the doctor because of illness more than most people my age.	1	2	3	4	5	6
26. I usually stay healthy even when my friends get sick.	1	2	3	4	5	6

Marsh, Richards, Johnson, Roche, & Tremayne (1994). *Physical Self Description Questionnaire*. (Adapted and used with permission.)

APPENDIX G

Work Performance Scale

Directions: Each of the eight items in this questionnaire are components of work performance. This questionnaire involves the use of lines to indicate your perception or opinion about your work performance. Different people will have quite different perceptions. YOUR RESPONSES WILL NOT BE SHARED WITH ANYONE. The following is an example of how to perform the task:

EXAMPLE: The typical manager's effectiveness at CONFLICT RESOLUTION is arbitrarily given by this researcher as:

REFERENCE LINE (*the typical manager*):

.....

Relative to this "TYPICAL" manager, you would DRAW A LINE that indicates how effective you are at CONFLICT RESOLUTION. If you perceive that you are less effective than the typical manger then your line would be shorter. The length of the line below indicates that I think that I am a lot less effective at conflict resolution than the typical manager:

RESPONSE LINE (*my performance*):

If you perceive that you are more effective then your line will be longer, such as:

RESPONSE LINE: (*example*)

This is only an example. For each of the items 1-8 in this questionnaire, DRAW A LINE in the space given that best indicates how you perform. *IF you do not perform the function mentioned in the item, then write "NA" in the RESPONSE LINE area.*

1. Application of know-how. How well you perform core components---the nuts and bolts---of your job that distinguishes you from other persons in your industry or business. Core components will vary by industry, such as mechanical engineering, marketing, finance, customer service, and operations.

REFERENCE LINE (*the typical manager's performance*):

.....

RESPONSE LINE (*Draw a line to indicate your performance. Begin at the dot.*)

.

2. Non-specific tasks. Tasks which are not part of your job description, but that you are expected to do or know anyway. For instance, military officers must be able to perform basic first aid and navigate successfully, although they usually have others perform these tasks.

REFERENCE LINE (*the typical manager's performance*):

.....

RESPONSE LINE (*Draw a line to indicate your performance. Begin at the dot.*)

.

3. Written and oral communication. The ability to make oral or written presentations to audiences that may vary from one to many. The proficiency with which you write or speak, independent of the correctness of the subject matter.

REFERENCE LINE (*the typical manager's performance*):

.....

RESPONSE LINE (*Draw a line to indicate your performance. Begin at the dot.*):

.

4. Demonstrating effort. Your individual effort day-by-day, the degree to which you will expend extra effort when required, the willingness to keep working under adverse conditions, the willingness to commit to all job tasks, and work at high intensity levels.

REFERENCE LINE (*the typical manager's performance*):

.....

RESPONSE LINE (*Draw a line to indicate your performance. Begin at the dot.*):

.

5. Maintaining personal discipline. The extent to which your behavior stays on purpose to achieve organizational goals.

REFERENCE LINE (*the typical manager's performance*):

.....

RESPONSE LINE (*Draw a line to indicate your performance. Begin at the dot.*):

.

6. Facilitating peer and team performance. The degree with which you support your peers, help them with problems and keep the group goal-directed, including reinforcing participation by others in the group.

REFERENCE LINE (*the typical manager's performance*):

.....

RESPONSE LINE (*Draw a line to indicate your performance. Begin at the dot.*):

.

7. Supervision. Influencing the performance of others through face-to-face interaction and influence. Includes setting goals, monitoring their progress, helping them perform better by providing constructive feedback, and modeling appropriate behaviors.

REFERENCE LINE (*the typical manager's performance*):

.....

RESPONSE LINE (*Draw a line to indicate your performance. Begin at the dot.*):

.

8. Management/Administration. Setting clear goals, organizing or coordinating people and resources, helping to overcome problems that stand in the way of goal accomplishment, obtaining resources, and representing the unit in dealing with others.

REFERENCE LINE (*the typical manager's performance*):

.....

RESPONSE LINE (*Draw a line to indicate your performance. Begin at the dot.*):

.

The final item, below, asks for a global assessment of your work performance according to the perception of whoever you report to.

You may be able to indicate this based upon your most recent performance review; you may have to guess.

Circle the word or phrase that best describes this person's perception of your overall performance.

Not
Effective

Needs
Improvement

Adequate

Good

Excellent

APPENDIX H

Demographic Information

Please answer the following items by checking (✓) the choice that best describes you.

1. What is your gender? ☐ Female ☐ Male

2. What is your current marital status?

- ☐ Married/Partnered
- ☐ Single
- ☐ Separated
- ☐ Divorced
- ☐ Widowed

3. What is the highest education that you have completed?

- ☐ less than high school
- ☐ high school graduate
- ☐ trade/technical school
- ☐ an Associate degree
- ☐ a Bachelor's degree
- ☐ a Master's degree
- ☐ a professional degree (e.g. DDS, JD, MD)
- ☐ a Doctorate (e.g. Ph.D., Ed.D.)

4. How long have you worked in your current position?

- ☐ less than one year
- ☐ 1 to 5 years
- ☐ 6 to 10 years
- ☐ more than 10 years

5. The job title that best describes me is:

- ☐ Sales representative
- ☐ Service provider
- ☐ Supervisor
- ☐ Mid-level manager
- ☐ Upper-level manager
- ☐ Executive
- ☐ Professional staff
- ☐ Independent contractor

6. The cultural background with which I identify and which represents my heritage:

- ☐ American Indian
- ☐ Alaskan Native
- ☐ Asian or Pacific Islander
- ☐ African American
- ☐ Caucasian
- ☐ Hispanic
- ☐ Other (please specify) _____

7. What is the approximate size of the community in which you live?

- ☐ Rural, less than 2,500 people
- ☐ Small town, 2,500 - 15,000
- ☐ Mid-size town, 15 - 50,000
- ☐ Large town, 50 - 100,000
- ☐ Metropolitan area, over 100,000

8. Do you live alone? ☐ Yes ☐ No

9. In general, how would rate my overall health during the past year?

- ☐ Very Poor
- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Excellent

10. On a scale of 1 to 10, with 1 being low and 10 being high, how would you rate your overall *wellness*? (circle best answer)

1 2 3 4 5 6 7 8 9 10

11. On a scale of 1 to 10, with 1 being low and 10 being high, how would you rate your overall *happiness*? (circle best answer)

1 2 3 4 5 6 7 8 9 10

12. Place a mark along the line which best describes your immediate work environment (not the environment of the organization as a whole.)

Authoritarian _____ * _____ Participative

13. Height (please complete) _____ feet, _____ inches; weight: _____ pounds

14. My age is:

_____ under 25 _____ 25 to 35 _____ 35 to 45 _____ 45 to 55 _____ 55 to 65 _____ 65+

If you would like to receive feedback about your overall wellness, please complete:

Name _____

Home Address _____

City _____ State _____ ZIP _____

Send me a summary of the research findings: ☐ Yes ☐ No